MAR 3 1921

THE BUILDER

A JOURNAL FOR THE ARCHITECT & CONSTRUCTOR

VOLUME CXX. No. 4072. Seventy-ninth Year.

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VOL. CXX.—No. 4672. FEBRUARY 18, 1921.

SOME THOUGHTS ON WAR MEMORIALS.

THERE appeared recently the account of an interview with Mr. Cass Gilbert, Junr., in the *American Architect*, to which we refer elsewhere in our columns, and in which the question was asked as to "what form memorials should take." Such a question is not answered by the consideration of whether they should be for beauty or for utility, or a combination of both, because it still leaves untouched the paramount consideration of how we shall create this beauty. No man can jump over his own shadow, and in an age more prone to acting than to thinking, more concerned with its ordinary self than with its higher self—an age which has been so much dominated by material aims—is not in the best situation to reach beauty at all. None the less, we can only work on the material we have got, and the query which arises out of this consideration is how and where to look for it. Without referring to particular instances, London furnishes a good example of how not to do war memorials. Mr. Cass Gilbert says, "The present knows and will remember," but how shall we create memorials of such a character that our descendants shall do so? In regard to the form they should take, there is much in present methods that is open to question. If our memorials are to be an undying witness to posterity, who will not share our feelings in regard to the war, must we not endow them with such beauty and significance as will ensure their preservation? Is it likely that, for instance, the inscribing of a thousand names of the fallen on either side of a new gateway, which is wanted to improve an entrance, will have for posterity the interest of some noble sculptural group, or shrine, erected for its own sake? It appears to us very doubtful whether this mixing up of utility with beauty in such a connection is any security against the recurrence of the same impulse of utility which will later on replace it for something else. In the case of a new chancel screen, will posterity long associate it with the memories it is supposed to enshrine or forget them altogether?

If it is asked "How shall we commemorate these glorious young men?" it is in any case difficult enough to provide the answer. Did anyone ever express what was felt in the agonising hour of loss or parting? And perhaps there are no words or monuments through which to give adequate expression; so we must not expect too much from the artist, who is only ourselves expressed more intensely, making articulate for us that which we more dimly apprehend. It is only because he has felt more that he can express more; all the pride of achievement and skill is useless without this. Only when the sorrows and the joys of the world are refined in the crucible of his heart, can the artist reveal the beauty which broods over the world.

To the inquiry, "Should we defer then the erecting of memorials to a later time?" Mr. Gilbert seems to give the right answer in saying: "The achievements of the present should be commemorated in the present." But such an answer compels us, on the evidence of the results so far achieved, to inquire more closely as to whether we are looking in the right direction. It appears that we have to recover our sense of values. Materialism dies hard, and so do its false values. First of all the security for beauty cannot primarily rest—will never rest—on money. We cannot delegate our responsibility by purchase. New values are challenging old esteem as they are challenging reputation. We have not been apprehensive enough of beauty to look for it in the gifts of the spirit, and it is the spirit in which we act which is the highest matter.

Turning to the practical side, the work of the sculptor has been far too much neglected in recent memorials; too much subordinated or superseded by erections very empty of content. We are not likely in these pages to deprecate the high place of architecture, but though this is so, it must not lead us to forget that the arts depend on each other for their mutual support, strength and well-being. The ideal memorial, not entangled with any merely utilitarian purpose, will depend on the fullness of faculty and endowment embodied in it. In the majority of memorials brought to our notice there is a lack of all this. It is material so dimly touched by personal feeling and treatment that it leaves us cold, the craftsmanship is too poor to embody anything arresting or suggestive. Professor Lethaby points out with much truth that "architects properly should not 'design' carving, they cannot know enough about it, and this kind of work should go to a sculptor to begin with." We have only to look at the memorial on the Embankment, presented by the Belgian nation to England, to see the extent of the failure where this is not realised. Design and treatment should go hand-in-hand if the results are not to be "flat, stale and unprofitable." The sculptor—no less than the architect when concerned with sculpture—is often much at fault where architecture is concerned through want of a proper working union between the two. And here we are not quite in agreement with Mr. Cass Gilbert, who, in speaking of the relationship that should exist between them, says that "in certain cases the architect should have complete supervision of every detail." If he includes sculpture in this view, is he right? And as it raises a point of great moment in regard to the future relationships between the two, on which the welfare of art much depends, it is a question for consideration. We incline to the view that no one is complete in himself, and that we need to fortify our own strength through the strength of others; this is specially so in the arts, which are so interdependent. It is fellowship that is wanted, based on sound principles and a working co-operation, rather than ascendancy. There is no first or last in art, and to suppose so is to get away from reality and life. The endowment of the artist is the only index of what is first in art, be he architect or sculptor. What unconsciously intervenes between the two is the claim of dominance, and architecture is so great an art that no such claim need be made for it.

The subject matter of memorials is a consideration of much consequence, and we are needing something more than the mere use and wont of such occasions. The cenotaph, the broken column, the obelisk; figures of war, peace, valour, or triumphal arches—do they cover more than one aspect of the matter or exhaust all that we feel about this late most fearful war? In so many of them are we not guided more by antiquity than any vital feelings of our own in the matter? We appear to get out of a difficulty in this way, but do we really get out of it? If we were to dwell more on our own thoughts would it not be towards a symbolism replacing these with something nearer to our own feelings? Does there not lie the hint of a new subject matter which stirs within us, to replace these symbols of war and its endowments with subjects prefiguring a new and better ordering of the world? Is there not need of a new nativity of art which shall recreate it, replacing the ideas that move round war, with the ideals of a new confederation of the world out of its divided and imprisoned state? Else have our fallen died in vain.

These thoughts may occur to us at a time when a new era is announcing itself, and when men's thoughts are turned to look for more justification of life and some deliverance from its calamities, its inequalities, its deferred hopes. We, therefore, welcome the interpretation which the young men of the time have to offer us, seeing how little recent memorials have to record for us of this new spirit; looking to them to lift our thoughts by a nobler imagery and suggestion out of its blood, its labour, and its tears.

NOTES.

Office Practice.

THAT the similarities between English and American architectural office practice are more common than the differences is the opinion expressed by Mr. E. W. Martin in his article given elsewhere in this issue. The differences shown will strike some of us as a little curious. To begin with, Mr. Martin thinks an English assistant has to hurry more than an American one and that the bustling of assistants there is more apparent than real. As a matter of fact, he says, the half-inch scale details are more accurate and more carefully considered in America, and not so rushed as they are here. It seems to him that it pays to make haste slowly when you are preparing your first drawings. Two good points about drawings are named. One of them is to have the sheets of drawings all the same size, and another is to put the title and references at the right-hand bottom corner, as being much more easily referred to. He strongly advocates the adoption of a standard sheet with a printed title. He suggests a detailed schedule of all door and window openings for the lower floor. It is also suggested that we might with advantage use blue prints here in preference to black prints on white paper. He seems sure that our English quantity surveyor is of great value, and that in America they would do well to adopt his services, and so obtain closer and more accurate tendering.

English and American Practice.

IT is possible that our best English offices have little of moment to learn from the practice in America, but we agree with Mr. Martin that it would be a good thing if more English draughtsmen and architects studied the practice in American offices carrying out the great American buildings, just as Americans would gain some useful influence from the best kind of English domestic practice.

Speeding Up Building.

IN the course of his admirable and well-delivered paper on the Cunard Building, at Liverpool, read at the R.I.B.A. on Monday, and reported elsewhere in this issue, Mr. W. E. Willink mentioned that that building was erected at the rate of one story per month, which was considered a good performance. The new headquarters of the Cunard Company in America are now, however, being built at the rate of two stories per month, and this Mr. Willink attributes to the organisation of the American contractors. It is part of the American system that only one trade works on each floor at a time, and as each floor is ready for them the heating and ventilating engineers, wiremen, plasterers, painters, &c., take complete possession in their turn, finish their work, and move upwards to make way for the next. In that way each trade progresses from the bottom to the top of the building without ever being mixed up with the others, and as soon as its work is finished leaves the building in a body. The system seems to be a great improvement on the many different trades, with their tools and plant, being distributed over the whole of a large building at the same time.

Old Wall Paintings at St. Stephen's.

THE lecture which Mr. T. Wilson, Clerk of Works to the Palace of Westminster, delivered at the meeting of the London Society, with an illustrated account of the history of this ancient building, was full of interest. It appears to have been founded about seventy years after the Conquest. The building was in hand through the whole of the reign of Edward III, and, as the lecturer stated, "probably expressed a couple of generations of English craftsmen's efforts." It contained some fine wall paintings which were covered up by wainscoting when it was first used by the Commons as their meeting-place. Later on, in 1800, to accommodate the Irish Members of the House of Commons, the wainscot was removed in order to cut back the wall, when these reputedly magnificent mediæval wall paintings were discovered. No attention, however, was paid to their preservation by the architects of the time, so that this shrine of fourteenth-century art has largely perished, a fire in 1834 completing the destruction.

The Artists' General Benevolent Institution.

THE recurrence of the annual general meeting of this valuable Institution, which gives so much help in quiet, tactful ways, and is of such assistance to artists, reminds us of the part that beauty ought to play in life and of the struggles of those whose genius contributes to maintain it. Lafcardio Hearne, in one of his lectures to the University of Tokio, Japan, says, in speaking of literature, the life of the writer requires "all the time and all the power that he can spare," and that it is for this reason that "the life of the man who writes must be solitary." He cannot be spending his time in society, if he is to make the highest use of his gifts, because he dissipates his strength in doing so. Applying this to the artist we see how difficult the position is between the claims of his work and his livelihood, separating him, as it does, from the contact which so much assists in securing it. It is particularly so to-day when there is a kind of impatience and irritation expressed at any way of life differing from the accustomed hustle. Yet the service the artist offers to the State is

From Rassegna D'Arte.

Italian Decoration: Small Banner with Coat-of-Arms.

An Old Devonshire Cottage, with Cylindrica Chimneys.
[From a photograph by the late W. RUPERT DAVISON.]

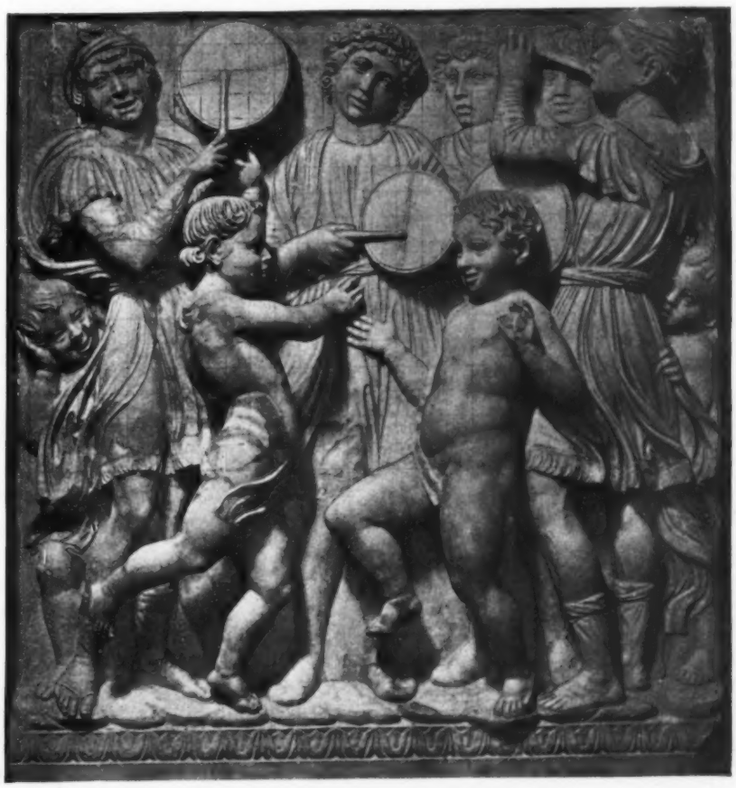
no mean one, for is he not devoted to sustaining the well-being and dignity of life? When it is remembered that his service has to be given at a cost of so many advantages that the world can give, and that for him "to scorn delights and live laborious days" is the lot accorded, we owe to the arts our intelligent support. The labours of the artist should hold a high place in the view of all true citizenship, and each should take his part in promoting the interests of that which is so important to the world.

Unbreakable Glass. ONE would hardly regard glass as a protection from bullets, yet we hear of tests made in New York on glass of a special character from which bullets (steel jacketed) fired from an army pistol merely rebounded. This glass is costly, and we have no information as to its composition, but that it must be very valuable for certain purposes seems obvious. Where buildings containing valuables are likely to be subjected to shock, such glass—unbreakable, comparatively speaking—would be a great safeguard. The days of suffragettes are over, but there are still people who aspire to breaking a jeweller's window. Research is being carried out on glass in this country, and we think we read something about pavement lights in this connection in a recent R.I.B.A. annual report. Improvements are much wanted, not only in shock resistance, but in the matter of hardness.

Novel Treatment of Foundations. A NOVEL and economical method of dealing with foundations below water level is quoted in a recent issue of the *American Architect*. The building in question was an hotel, only some hundred yards from the sea-beach, and it was necessary to excavate to a depth which readily admitted water. Instead of using piles or compressed air, after ascertaining that the sand foundation was suitable for its purpose, a series of "wells" only two or three feet apart were sunk all round the site, consisting of 1½ in. pipes with strainers at the ends to exclude the sand. These pipes were then all connected at their upper ends with a common main attached to a pump and the water ejected at a sufficient distance. The pipes terminated in the ground only a few inches below the bottom of the excavations. The scheme is stated to have proved most successful; the sand bottom was retained quite firm and undisturbed, and the pump proved capable of dealing with storms and high tides.

The Salaries of Architectural Assistants. A CORRESPONDENT, whose letter appears on another page, sends us some newspaper cuttings from an Edinburgh contemporary in reference to the salaries and prospects of architectural assistants. The correspondence referred to certainly shows what inadequate salaries are still being paid to assistants in the profession, but it also shows that assistants in other professions suffer in the same way. So far as the architectural profession is concerned, many architects are paying substantial increases on pre-war salaries, and where they are not, it is not due to any lack of sympathy, but to inability—because they are not themselves doing sufficient work to justify increases.

The Late Sir W. B. Richmond. AT a later day it is possible that the work of the late Sir W. B. Richmond, whose death we regret to record, will be judged more fairly than it would be to-day. We cannot forget some of his first-rate portraiture or some of his best pictures, but the best architectural judges would hardly estimate his permanent building decoration with equal sympathy. The comparison between his work in the Old Bailey and the other decorative panels there has been to us rather distressing, notwithstanding the ability shown in his mosaics in St. Paul's, which many consider are the wrong thing in the wrong place.



Dancing Children, by Lucca della Robia [STATUARY GROUP AT FLORENCE].

GENERAL NEWS.

Appointment.

Mr. Gilbert H. Lovegrove, F.R.I.B.A., F.S.I., of 374–378, Old-street, E.C. 2, has been appointed Surveyor to the Honourable Artillery Company, following the resignation of Mr. William Woodward.

An Architect's Estate.

The late Mr. J. Webster, A.R.I.B.A., of Tunbridge Wells, left estate valued at £42,685.

The Royal West of England Academy.

Mr. C. F. W. Dening, F.R.I.B.A., has been elected to succeed Mr. F. A. W. T. Armstrong as Artists' Chairman of the Royal West of England Academy.

The Old G.P.O. Site.

It is reported that the Government has decided not to build on the site of the old General Post Office in St. Martin's-le-Grand, and that the Corporation of London has been offered the refusal of the site, which it may acquire in connection with the St. Paul's Bridge scheme.

A City Site for Sale.

The site in Thames-street of the City of London Brewery, known since the days of Queen Elizabeth as the only brewery in the City of London, is for sale. It occupies nearly two acres adjoining Cannon-street Station, and has a considerable river frontage.

Syon House.

It is announced that the Duke of Northumberland has instructed Messrs. George Trollope & Sons to let for a term of years Syon House, Isleworth, the interior of which was reconstructed and redecorated by Robert Adam.

North London Railway War Memorial.

A memorial was unveiled last week to the staff of the North London Railway Company who fell in the war. The memorial, designed by Mr. R. Wynn Owen, A.R.I.B.A., is in the form of a square freestone obelisk, and has been erected in a prominent position facing the chief platform of Broad-street Station.

The President of the R.I.B.A.

The President of the Royal Institute of British Architects, Mr. John W. Simpson, has received from M. Louvet, President of the Société des Architectes diplômés par le Gouvernement, notification of his election as *Membre Correspondant* of that body. Mr. Simpson has also been elected an Honorary Member of the Institute of Scottish Architects.

Washington Statue for London.

It is announced that the presentation by the State of Virginia to Great Britain of a copy of the famous Houdon statue of George Washington will take place in the spring. The site chosen for the gift is the grass plot in Trafalgar-square to the right of the entrance to the National Gallery. The original statue, which stands in the rotunda of the State Capitol at Richmond, Virginia, is of white marble, 6 ft. high, standing upon a base 4 ft. 6 in. high. The replica is of bronze mounted upon a pedestal of simple design.

London University Site.

The negotiations which have been proceeding through Sir Howard Frank, between the Duke of Bedford and the Government, for the sale of the freehold site of 11½ acres at the back of the British Museum, to the Government, for the purpose of the University of London, have now been completed, and the contracts have been signed and exchanged.

The London County Council, on Tuesday, passed to the Education Committee the instruction contained in a motion that the committee should confer forthwith with the Improvements and Building Acts Committees on the question of the site at Holland Park for the University of London. The committees are asked to submit a recommendation so drawn as to give the Council an opportunity of arriving at a decision in the matter, with due regard to the development of London and other large questions of policy involved.

Northern Architectural Association Sketching Club.

The headquarters of the Northern Architectural Association, Higham-place, Newcastle, was the scene of a pleasing function on February 11, when Mr. C. S. Errington, F.R.I.B.A. (President of the Association), declared open the new sketching club for students, the objects of which are for education and social intercourse. The President congratulated the members on their enterprise.

Art and Industry.

At the Royal Society of Arts last week Professor W. Rothenstein, Principal of the Royal College of Art, gave an address on "Possibilities for the Improvement of Industrial Art in England." The museums, he said, had become more and more accumulative and less and less creative. Their idea was to acquire more objects that were expensive and rare than other countries could, instead of helping the creative people. Only eight museums in the country had any direct bearing on their local industries. They were told that the public taste was too bad for manufacturers to produce beautiful articles, but artists believed that the public taste was better than most manufacturers and distributors believed. There was still an idea that there was something ignoble about manufacture and something very fine about art.

The Northern Polytechnic Institute.

Arrangements have been made to commence classes at the Department of Architecture, Surveying and Building, at the Northern Polytechnic Institute, for the instruction of masons and others in all subjects connected with monumental masonry. These classes will be held on Tuesday and Thursday evening, from 7 to 9 p.m., additional day classes being formed at a later date for those who can attend more conveniently in the day time. The subjects taught will include geometry, fitting and practical work. The first class will be held on February 22, at 7 p.m. It is particularly desired that master monumental masons and heads of firms will be present on the opening night, so that intending students will realise the importance attached to their advancement by their employers.

OBITUARY.

Sir W. B. Richmond, R.A.

The death occurred on Friday last at his residence at Hammersmith, of Sir William Blake Richmond, R.A., at the age of 78. He entered the Royal Academy Schools before he was 14 years of age, and at that date and later was influenced by Holman Hunt, Millais, Burne-Jones, and Ruskin. He succeeded Ruskin as Professor of Fine Art at Oxford (1878-83), and was elected a Royal Academician in 1895. Sir William is perhaps best known as a portrait painter, and he had many sitters amongst eminent men. In regard to the commission he received to decorate St. Paul's Cathedral in mosaic *The Times* says:—"There were many who thought it a mistake to attempt such a colossal undertaking, seeing that it is quite uncertain whether Wren ever contemplated anything of the kind for his great church, and seeing also that mosaic decoration has never taken real root in England; but Richmond was courageous enough to make the effort, filled as he was with Italian memories and Italian ideas. As everybody knows, the work, so far as it has gone, has been as much attacked as praised. We shall not venture to decide between the critics and the admirers. It may be enough to say that Richmond's solid reputation will rest rather on his portraits, often beautiful and always full of the truth of character, and upon some at least of his large 'historical' or rather ideal, pictures."

At the time of his death Sir William was writing a chapter for the new book on London which the London Society is shortly to publish.

COMPETITION NEWS.

Glasgow.

The following are the names of the ten architects invited to take part in the competition for a new Girls' High School, at Hillhead, for the Glasgow Education Authority:—

Mr. A. C. Dickie, M.A., Professor of Architecture, Manchester University.
Mr. W. Curtis Green, F.R.I.B.A., London, S.W. 1.
Mr. Maxwell Ayrton, Gray's Inn, London.
Mr. H. Burke Downing, F.S.A., London, S.W.1
Mr. A. N. Paterson, M.A., A.R.S.A., Glasgow.
Mr. John Keppie, A.R.S.A., Glasgow.
Mr. John Watson, F.R.I.B.A., Glasgow.
Mr. Reginald O. Fairlie, Edinburgh.
Mr. Andrew Balfour, F.R.I.B.A., Glasgow.
Mr. Matthew Adam, Glasgow.

The names of those selected to take part in the final competition with the above were given in our last issue.

We understand that questions in connection with the second competition should be sent in not later than February 28, and that designs must be lodged by May 30. Certain additional instructions regarding minor points have been given to the competitors; but the programme remains substantially as it was in the first competition, except that the Authority has now abandoned the limit of cost previously imposed, and leaves that question open.

Glasgow.

FOR THE HIGH SCHOOL OF GLASGOW.—Designs for a war memorial. Sending-in day, March 31. (See advertisement December 31.)

Gateshead.

As announced in our last issue, the design of Mr. John W. Spink, of Kingston-on-Thames, was placed first in the Gateshead War Memorial. The design of Mr. W. G. Phillips, P.A.S.I., was placed second. In assessing the designs, the Committee called in the assistance of Mr. Arthur Stockwell, F.S.A., of Newcastle-on-Tyne.

Rothesay.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial. The sending-in date for this competition has been extended to March 26 (see our issue for February 4).

East Ham.

FOR THE EAST HAM HOSPITAL COMMITTEE.—Designs for a general hospital, to cost £40,000. Sending-in day, February 25, 1921. (See our issue for November 5.)

Other Competitions.

Other competitions still open include Royal Engineers' War Memorial (sending-in day March 17); Campbeltown, April 8.

THE SURVEYORS' INSTITUTION

THE INDUSTRIAL COUNCIL FOR THE BUILDING INDUSTRY.—Messrs. J. E. Drower, C.B.E., A. E. Harris, R. M. Kearns, and E. C. P. Monson have been nominated as representatives of the Institution on this Council.

INSTITUTION SCHOLARSHIPS.—As a result of the recent examination, two scholarships have been awarded—one of £80 per annum to Mr. J. K. Reid, of Newcastle-on-Tyne, who will take his at the Armstrong College, Newcastle-on-Tyne, and one of £50 to Mr. R. J. Newcombe, of Oxford, who has entered for the agricultural course at Oxford University.

THE AGRICULTURE ACT, 1920.—The Council has invited representatives of the Auctioneers' and Estate Agents' Institute and the Central Association of Agricultural and Tenant-right Valuers to confer with them as to the basis of remuneration for arbitrators to be laid down under Sec. 21 of this Act.

THE COLLEGE OF ESTATE MANAGEMENT.—It has been decided to allow students of this College to make use of the Forestry Museum of the Institution.

THE EFFICIENCY EXHIBITION.—The President will receive members of the Institution in the Prince's Room, Olympia, at 2.30 p.m. on Wednesday, February 23, on the occasion of their official visit to the Efficiency Exhibition.

CORRESPONDENCE.

The Office of Works.

SIR,—The following appeared in your issue for the 11th instant:—"It is stated that the Office of Works has now increased its staff by the creation of fifty-two *permanent posts* as 'superintendents of works,' and by taking on the permanent staff forty temporary clerks of works. The Office of Works now proposes to undertake the upkeep and repair of public buildings by *direct labour* instead of having the work done by *contract*." (My italics).

I hesitate to criticise unless constructively. Nevertheless, I feel that something less abrupt than this bald statement would have been preferable. For instance, if I may trespass so far, perhaps some instructive information as to the purpose for which the Office of Works was called into being, together with the origin of the authority of the Office of Works for departing from such purpose, might have at least softened the blow to some of us who have been led to believe that we followed a legitimate calling in the building world.

H. BRYANT NEWBOLD,
National Fed. of Building Trades' Employers,

Competitions.

SIR,—Mr. J. W. Simpson's address to students at the R.I.B.A., as published in your issue for the 4th inst., contains much excellent advice to those who are about to devote their lives to the service of the art of architecture. His views on the subject of open competitions and their assessment are encouraging to students and honouring to himself. One wishes that competitions in practice were as satisfactory to all concerned as they are in theory. May I offer a few remarks on this subject, and make one or two suggestions? As to the Conditions of an open competition; the assessor should make it quite clear to competitors that these really are "Conditions" and not merely "suggestions" to be kept to or not, as the individual competitor thinks fit. It is common knowledge that very few winning designs satisfy Conditions, and the question for a competitor is not so much the "length of an assessor's foot" as how many awkward Conditions may be ignored with safety. In a recent competition for a school the Condition which governed the plan more than any other was completely ignored in the winning design, though not in those placed second, third, and unplaced. In the case of one design for this competition—which I saw in the making—the fulfilment of this Condition caused the abandonment of a plan on the lines of the first premiated design.

As to cost. This important consideration has been responsible for the death of many a fine architectural scheme which, with slight alterations in the executed work, would have been as cheap as the building erected from the winning, and inferior, design. As an example, one or more of the unsuccessful designs submitted in the competition for the L.C.C. County Hall bear more resemblance, in principle, to the plan of the finished building than does the winning design, which has been radically altered in the executed work. This is no slight on the fine building now approaching completion, but is an example of faulty assessing, which apparently was influenced by cheapness. Mr. J. W. Simpson's principle of always settling the rate per foot cube to be allowed should be a rule in all competitions.

There is no appeal from the decision of an assessor. That this is so is a tribute to the hopeful and confiding nature of competitors, but not to their common sense. It is absurd that perhaps a hundred architects will spend the best working hours of the day—or night—for, say, three months in the preparation of finished drawings, with the results depicted above. I suggest some system of assessing other than that existing at present; the judge and jury system has held good in legal cases for many hundreds of years, and there is no reason why this system should not be applied to architectural competitions. The assessor would still get his fee, and the jury would see fair play at an inconsiderable cost to the promoters.

There is little doubt that many architects would gladly give their services in this cause provided their out-of-pocket expenses were paid. The R.I.B.A. could keep a roll of those willing to serve, and call them up in rotation.

Also I suggest that in a competition of any size it is a great waste of time from all points of view—educational and otherwise—for all competitors to send in finished drawings. A preliminary competition should always be held, competitors submitting sketch plans and elevations in pencil. A limited number of these—according to the number of designs submitted—say 10 per cent., could then be asked to complete their set of drawings and re-submit them, thus saving 90 per cent. of the competitors the labour and time spent on the working up of useless drawings.

London. ARTHUR WELFORD.

Scottish Architectural Assistants.

SIR,—A most illuminating correspondence has been going on in the columns of the *Edinburgh Evening News*—a paper with a very wide circulation in the south-east of Scotland—regarding the subject mentioned above.

"A Father" opened the campaign by stating that his son, having recently completed his apprenticeship, "was informed that he would be kept on for three months at the magnificent salary of 30s. per week." The surprised parent found this state of affairs was fairly general.

Since the publication of this letter several others have appeared from assistants who, having discovered too late that this profession is a *cul de sac* so far as they are concerned, strongly urge parents and guardians to avoid placing their sons and wards in such a poverty-stricken walk of life.

Two correspondents refer to the long, toilsome, and expensive course of study required by those who desire to become Associates R.I.B.A. I am surprised, considering these financial limitations, that so many young Scotsmen trouble with the Institute's examinations, as the conditions, so far as they are concerned, are not very favourable—the examination papers, especially in "Specifications and the Law of Contracts," having a strong English or rather London, flavour. Then consider the expense. I wonder if London students would like to have to travel 400 or 500 miles and put up in an hotel for at least ten days, during which time they have to face a very severe test of efficiency—frequently having as its reward a complete or partial failure, plus the loss of at least £15 to £18.

The foregoing grievances call for speedy rectification. As regards the examination question, perhaps the Scottish architects would be well advised to have their own tests of capacity which would respect building laws and practice as understood in Scotland, and also save hard-earned money.

Edinburgh. "SCOTIA."

The Artistic *v.* the Money Incentive.

SIR,—My remark, referred to in your interesting leading article last week, was called forth by a statement to the effect that fundamentally it is personal profit which makes the world go round. A right apprehension of this question of incentive is essential to the understanding of artistic as well as social difficulties; and it was amusing and cheering to see that the deliberations of the Building Trades' Parliament became narrowed to this simple issue. Let it be argued out. There are still apparently many who cling to a curious belief that money is greater than man, in spite of all history and experience, and in spite of the existing chaotic conditions which are the inevitable result of such a creed. It is a popular misconception, which is naturally more apparent in social than in artistic discussion, but it must always go hand-in-hand with an equally wrong conception of the meaning of art. As Tagore says, "the object of art is not the production of beauty." Beauty will look after itself. It grows, as it were, out of truth. We can only seek it in building by a truthful solution of the material problem. We cannot create it directly and consciously by the mere study of form and colour, any more than we can produce the beauty of a rose by any other means than by planting and caring for the tree. We are all artists, including Mr. George Graves' friend who travels in spots for rocking-horses, and our work will ever be the mirror of our belief. The creative and the money incentive do not combine. They are opposites. If art has an object it must be simply the creative instinct, the expression of a personality, which is the song of the birds, the joy of life, the praise of God. To those who say that this is all philosophic dreaming I can only point out that it is the question upon which the practical politics of the Building Trades' Parliament broke down. We cannot get very far until it is understood.

London. E. E. LOFTING.

Minimum Salaries for Architectural Assistants.

SIR,—Will you kindly allow me to correct the "Note" in the current issue of your Journal apropos our minimum wage proposals? You state: "But it seems unfortunate that the A.S.A.P.U. did not make these proposals earlier. Nothing appears to have been gained by delay . . . twelve months ago."

It is just our point that we did officially present these proposals to the representatives of the professional institutions twelve months ago (February 17, 1920, to be precise). The delay has been none of our seeking, and the responsibility for it is solely with those bodies who had the unanimous resolutions of the Joint Committee referred to them last May.

CHAS. MCLACHLAN,
Hon. General Secretary, A.S.A.P.U.

Architectural Students' Competitions.

SIR,—I will not enter into controversy with Mr. Atkinson on the points that he raises: he may be right or wrong in his views, and few things are too perfect for amendment; but I suggest to him seriously that his right course is not to publish his criticisms in the Press when he has in his own hand the means for securing all that he wishes.

The Institute prizes are awarded, not by any jury of assessors, but by the Council of the Institute, which is a body elected by all the members. The Board of Architectural Education advises the Council on matters relating to the prizes, and if Mr. Atkinson had criticisms or suggestions to offer his obvious course was to bring them before the Board of which he is a member, knowing quite well that full weight would be given to any proposals made by him. If he failed to convince the Board he could deal with the matter in the Council, of which also he is a member. He has every opportunity of knowing the names of those appointed to study the work sent in for the prizes, of revising the conditions that he describes as arbitrary and slipshod, of amending the programmes that he objects to, of securing the publication of lists of names, and of excluding assessors whose selective ability does not seem to him to be up to the standard that he desires.

He advises students not to compete except under conditions which he outlines, but he has not brought these conditions before the notice either of the Board or the Council.

As regards his claim for students' work to be dealt with by young men who have sympathy with the attitude of the student, may I remind him that, in the very Committee that he particularly refers to, out of a total of eight members there was only one who could not be described as a young man, and he is at the head of one of the architectural schools. As a matter of fact he was not present. All the other were men who are well known for their active interest in schools and students.

The Press should be used for the discussion of broad matters of principle; questions of administration are better dealt with in the bodies that are concerned with them.

ARTHUR KEEN, *Hon. Sec. R.I.B.A.*

AN AMERICAN VIEW OF WAR MEMORIALS.

AN interview with Mr. Cass Gilbert, Junr., in the *American Architect*, touches on matters of so much importance concerning war memorials that we think it will be of general interest to include the following passages selected from the article :—

"A war memorial," Mr. Gilbert explained, "should be so designed and executed that it gives one impression only, and that impression should be one of sheer beauty, strongly suggestive of the ideals for which the memorial stands; namely, Courage, Bravery, Liberty and Victory. It should be thought of only in relation to those who were most actively and intimately engaged in the war. I am speaking not only of those who gave their lives on the field of battle, but of the men and women alike who gave themselves entirely to the aid of the Government in helping the men in the battle line. With those basic principles in mind, it is difficult to understand how anything other than the strictest interpretation of a memorial would suffice. The so-called utility which has been spoken of is not at all fair to the men who fought. Think of a so-called Community Centre, Public Hall, or other utility which should, perhaps, on its own merits be provided by the community in the normal progress of its development as opposed to a magnificent monumental memorial, and analyse the value of the two. The community idea, expressed by such a structure, would not be used to any great degree by the men most concerned with it. It would not be enough merely to provide some sort of 'forum' where people could meet to further citizenship. Supposing even that the scheme worked as contemplated, and that the 'forum' proved its worth as anticipated. What of it? What would there be in that to remind people in future years of the ideals for which men fought and for which men and women alike gave their all?"

Mr. Cass Gilbert is on more debatable ground in the following. In speaking of sculpture he raises the point of the true relationship between the arts of architecture and sculpture, as of all the arts, which is raised in our leading article. In reply to a question as to what sort of memorial he would suggest, he said :—

"The idealistic sort, the purely beautiful sort, which would most certainly serve the community with its idealism and its beauty, but which could not possibly be confused with a public gathering place in the sense that a building would be so confused. There are innumerable sorts of such memorials. Arches, monuments, symbolic statues, and so forth. In its planning and execution I would like to see a close co-operation between the architect and the sculptor. If it were to be set by itself, apart from any but a natural background, and not as a part of a structure, it may become then a matter more for the sculptor alone; but this is dependent upon its extent and importance; and where planning is required the services of the architect are essential. If it is to be a structure—arch, monument, or the like—in which the sculptor will contribute his share, I believe the architect should have complete supervision of every detail, so that whatever the sculptor produces will fit into the structure and not the structure into the sculptor's work."

There is much to be said in support of the contention sustained in the next passage. In many cases it is desirable that a site withdrawn and quiet, more suited to meditation than the crowded thoroughfare, should be the home of a memorial round which will gather the deepest and most poignant feelings, and it directs our attention to a view which has not been hitherto much considered :—

"Incidentally, let me say that the theory that a memorial to a present achievement should go where the greatest number of persons can see it is not always correct. A monument should be as conveniently located to the centre of population as possible, but it should always be located in a completely proper setting, with the right kind of background. There are very few places in New York City where a fitting memorial can be put up. Rather than risk a poor background, I believe in the more or less isolated location, so far as the centre of population or the heaviest circulation is concerned. Grant's tomb is an example of a memorial which is not at all centrally located, but which is most certainly visited by thousands of people who find it convenient to get there. I believe in people seeking the memorial, and not the memorial seeking the people."

THE FRANCO-BRITISH EXHIBITION OF TEXTILES.

THIS exhibition, at the Victoria and Albert Museum, is of great splendour and importance, and it is also a book in which whoso will may read the outlook and temper of the different periods represented by these great tapestries. It is the fashion of the moment—and a very unsound one critically—to assume that we have only to regard the art of any period with pleasure, to justify the mood or temper which it expressed. There is no good or bad in art, no justification or lack of justification for its direction or want of direction at any particular time. We have only to understand its moods and ideals, and it is the best of all art in a perfect world—whether fourteenth century or any other.

It would require an expert knowledge—to which we make no claim—in order to determine the extent to which tapestries, such as the great series from Rheims Cathedral, have faded since originally executed. These tapestries, associated with the church in which the French kings for a period of ten centuries were crowned—the Westminster Abbey of France—gives them an unusual claim to attention. On the right of these tapestries are four more of even greater beauty of colour and design, which should be carefully examined. It is difficult to appraise the relative value of a series of tapestries which in this court reach such very great beauty. No less noble in conception than treatment, they represent the art of tapestry in its finest expression.

Amongst the exhibits in the South Court, No. 28, "A School for Boys and Girls," of seventeenth century Flemish origin, is of especial charm and distinction. The two figures in the foreground, one seated, in the right-hand panel, are very fine in composition, and the expression and beauty of colour over the whole marks this tapestry out as the finest example in the South Court. The beautiful border should be especially noted. Nos. 42–45, "Tentures des Dieux," of French origin about 1700, are remarkable for the wealth of their subsidiary detail. A peacock and other birds and animals should be remarked. These tapestries are more conventional in design than No. 28, and not of equal merit, though with fine qualities of their own. No. 37, in this same court is very glorious in colour and design.

After the other galleries it is like coming out of the fresh mountain air into the company of plush and lackeys, and breathing the rather contaminated air of courts, to enter the Salon d'Honneur, or North Court, in which are shown the series of Gobelin tapestries and Savonnerie carpets from the "treasure" house of the Mobilier National. No longer working through and expressing the legitimate limits of the material, these great, pompous and pictorial representations, declining in merit as their production proceeded, for all their technical mastery, are most unsatisfying. They breathe of an artificial and luxurious time, shallow and declamatory in its notions of beauty, lacking both in dignity and restraint. One seems, in looking at them, to catch the odours of the perfume, and the wanton atmosphere, of the court which brought them forth. They are in many ways the illegitimate children of art, when it had lost its virtue. Those dating from 1686–1691 are better than those on the opposite wall dated 1715–1731, but it would be absurd to suggest that we have only to see in this the best of its own age to find it beautiful and satisfying. A critical method which "happily" enjoys the bad equally with the good; the pompous and powdered artificialities of a corrupt court, with the exaltation and detachment of an unsullied love of beauty, such as is seen in the earlier tapestries, has lost all compass and direction, and is merely darkening knowledge. The seven carpets woven at the Savonnerie factory in the time of Louis XIV might in the setting of a royal palace, where everything else was on a great scale, be tolerable, but looking at them as shown in the same gallery, especially those which have retained their original colour, they are of such a stridency of effect, such a declamatory arrogance of design, as may be compared with the music of massed bands. We see in this great series of tapestries of all periods, that behind all craftsmanship is the outlook and temper of the life that produced it. The man stands behind all that is wrought by his hand. When it is governed by a belief noble enough to exalt it, it gives us back what it has found in life of beauty and truth; when its service is governed by the demands of a corrupt society it gives off the evil exhalations of the atmosphere in which it moves. Craftsmanship is not enough. Only when life is ordered to care for the best things will art return to us the fair vision of beauty which life enfolds.

MODERNISM AND DESIGN.

WE have received the following letter from Mr. J. F. Wilson, A.R.I.B.A., of Ilford :—

SIR,—In taking up a recent issue of *The Builder* I was interested in the article "Modernism in Design," by Prof. W. R. Lethaby. In many respects I agree with his views, and especially that a work of architecture should be the direct expression of the practical conditions and materials, but although he says his suggestions are not meant to be æsthetic, but practical, some of those on structure are not quite logical from the practical builder's point of view.

I do not find this fault with tower No. 1, which is an admirable idea, but if the tower is to be built of granite, this being the local material, why not cover the top of it with slabs of granite, corbelled towards the centre, rather than introduce asphalte?

Tower No. 2 it would be most difficult to build in concrete as he suggests. The tapering forms of the corrugations would require fresh shuttering at every upward stage, just the very thing that the designer for concrete work wishes to avoid.

Tower No. 3 is a good (and also a traditional) shape, but I am convinced that brickwork would be the most difficult and expensive method of building, seeing that it is circular and tapering; think of the number of templates required progressing upwards! To form the conical top in brick would involve a tremendous amount of cutting and corbelling. Would not the tower be a better example for flint or squarish rubble construction, rather than of brick? The use of the materials found in a locality is undoubtedly right, and one wishes all success to Professor Lethaby's campaign in this respect.

Fig. 6 shows a fine use of local material in a country district, and is much better and more monumental than meaningless crosses and cenotaphs. Rough-hewn blocks of stone have a rugged grandeur giving strength. What a monument "Stonehenge" is, and what simplicity!—though, by the way, these stones do not happen to belong to this site.

[**** In reference to this correspondence we wish to explain that a statement by a correspondent last week—"A Grain of Mustard Seed," page 185—hardly represents the facts, inasmuch as Professor Lethaby is not engaging in a contest of eloquence and style "in undertaking to write the series of articles on "Modernism in Design." Under these circumstances it seems hardly right to expect Professor Lethaby to answer unsigned letters.—ED.]

ARCHITECTURAL SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

"Pecksniff—The Architect, Artist and Man."

A MEETING of the Birmingham Architectural Association was held at Birmingham on February 11, when the President, Mr. H. T. Buckland, F.R.I.B.A., occupied the chair.

Mr. H. B. Creswell, F.R.I.B.A., read a paper entitled "Pecksniff—the Architect, Artist and Man." The lecturer said he had observed that papers read before architectural societies, however valuable they might be as contributions to the science and the art, were uncommonly hard to listen to, and with the example of the London Architectural Association before him he had decided to choose a playful subject rather than a learned one. He had, therefore, taken the opportunity of tracing out exactly what Dickens had in mind when he drew the famous character of Pecksniff, pointing out that the novelist did not regard him as the good joke his readers found him to be, but rather piled abuse on him, seeming to resent him with a bitterness which suggested that Dickens had suffered at the hands of Pecksniff in real life. On this account, the fact that the author had represented a mean scamp as being an architect was a matter for serious self-examination by members of that profession. A very close reading was necessary to reveal what Dickens' ideas on Pecksniff's professional accessories, status, and surroundings were: such a reading would show an almost perfectly consistent picture, indicating that Dickens had not made a study of his subject, but had drawn on his observation, filling in the touches as his art required.

The lecturer displayed a plan of Pecksniff's house, which he had reconstructed from hints scattered throughout the novel, and read extracts setting forth Pecksniff's ingenious system of capturing orphans with four or five hundred pounds and binding them to himself as pupils, with the added obligation of paying seventy pounds per year for board and lodging in his house. This the lecturer compared with the present-day system of architectural pupilage, which was the ideal of certain architects who aspired to get people to pay for the privilege of doing work for which the architect received six per cent. remuneration, the pupils' advantages being in learning how his employer liked his work done.

Having dealt with Pecksniff the architect the lecturer went on to elaborate on Pecksniff the artist and man, explaining that his art was the social art, by far the most important art an architect could study. Passages were read illustrating the three chief characteristics of the man, namely, his almost perfect self-control, his entire lack of humour, and his efforts to keep up appearances.

At the conclusion of the lecture Mr. Arnold Harris proposed a vote of thanks, which was seconded by Mr. S. N. Cooke, and carried unanimously.

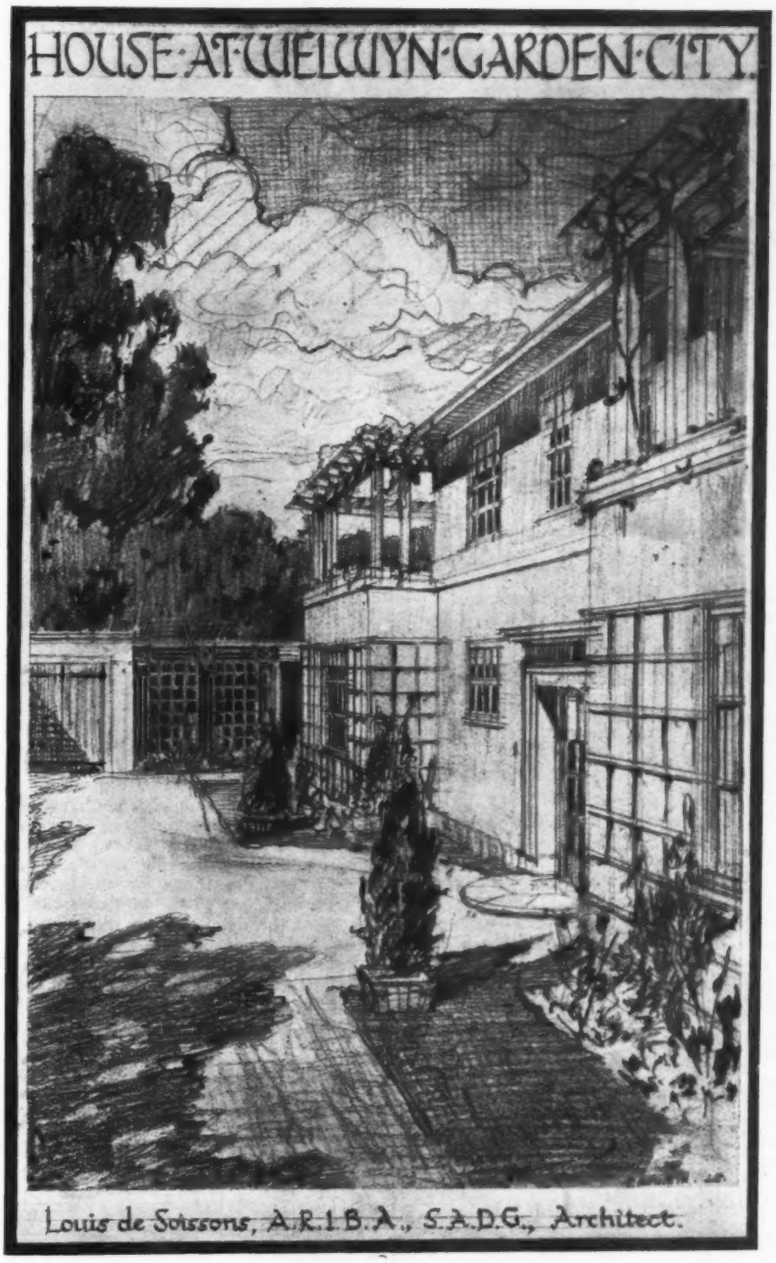
MANCHESTER SOCIETY OF ARCHITECTS.

Annual Dinner.

The annual dinner of the Manchester Society of Architects was held last month, Mr. A. W. Hemmings (President) in the chair.

In proposing the toast of "The Royal Institute of British Architects," Mr. Hemmings said the influence of the Royal Institute and the Allied Societies now covered the whole of the country. The profession must assist the Institute to secure the registration of the profession.

Mr. J. W. Simpson, P.R.I.B.A., in responding, said a scheme was on foot to secure greater consolidation and unity in the profession, but in the remodelling nothing should be done which would in any way injure the standing or position of the Institute, or diminish the prestige or power of its Allied Societies. On the other hand, decentralisation was rather to be aimed at—the complete autonomy of the provincial societies, subject only to the guidance in any policy by headquarters. The times were still unsettled, largely owing to the continued bureaucratic control of the Government. They submitted to it without grumbling during the war; but it was over two and a half years since the Armistice, yet the officials still maintained their strangle-hold of our industries. They were sick to death of being governed—governed, moreover, by the petty, trivial interferences of officials. There was no worse way of getting anything done than by a Government department. They ruined and muddled everything they touched, whether it was telephones or railways or housing. Now there was an effort to conceal and dissemble the housing failure by touting the local authorities for work to keep the officials of the Office of Works busy. What were the inducements offered to these authorities? They said: "We are architects, and can do all the work you want, but you need not pay architects' fees." Architects, then, were paying them by means of taxes, and in return officials were destroying architects' livelihoods by unprofessional means. The moral was that they needed political influence, and they must so organise that they would ensure the return of their own professional Members of Parliament, irrespective of party, to look after the interests of professional men.



(*See p.* 222).

ARCHITECTURAL ASSOCIATION OF IRELAND.

A Tour Through the East.

An ordinary meeting of the Architectural Association of Ireland was held at 15, South Frederick-lane, Dublin, on February 8. The President, Mr. J. C. Dewhurst, A.R.I.B.A., occupied the chair, and there was a good attendance of members and their friends.

Mr. Hubert Briscoe read an interesting paper entitled "A Tour through Constantinople and the East," which was illustrated by some excellent lantern slides. Mr. Briscoe made this tour before the war and gave a description of the principal buildings in Constantinople and its surroundings, and the manners and customs of the inhabitants.

A cordial vote of thanks to Mr. Briscoe was proposed by Mr. P. J. Munden, M.R.I.A.I., and seconded by Mr. M. J. Cullen.

MR. E. Guy DAWBER (Vice-President) occupied the chair at a General Meeting of the Royal Institute of British Architects held at 9, Conduit-street, W. 1, on Monday last.

The Late Sir William B. Richmond.

MR. ARTHUR KEEN (Honorary Secretary) announced the death of Sir William B. Richmond, R.A., who he said, was a very old friend of the Royal Institute, and had been an Honorary Associate since 1894. For some years he took an active part in the affairs of the Institute as a member of the Art Standing Committee. He read papers before the Institute on co-operation between architects, painters, and sculptors, and on the subject of decorative painting. He was also one of the leaders in the movement for the abatement of coal smoke in cities, and read a paper on the subject in 1902. He moved that an expression of the deepest regret of the Institute be entered on the minutes.

The Late Mr. E. Webster Cox.

He felt sure members would also wish to express their regret of the decease of Mr. Edward Webster Cox, who had been associated with *The Builder* for some sixty-six years, and for the past forty years had managed its financial affairs and watched over the policy of the paper. He had a firm grasp of architectural and building matters, and had been a close student of the problems that vexed the architectural profession and the building industry during the past half century. His influence, they might be sure, contributed largely to maintain the reputation his paper enjoyed among the technical journals of the day. He moved that an expression of the sympathy of the members of the Royal Institute be communicated to the proprietors of *The Builder*.

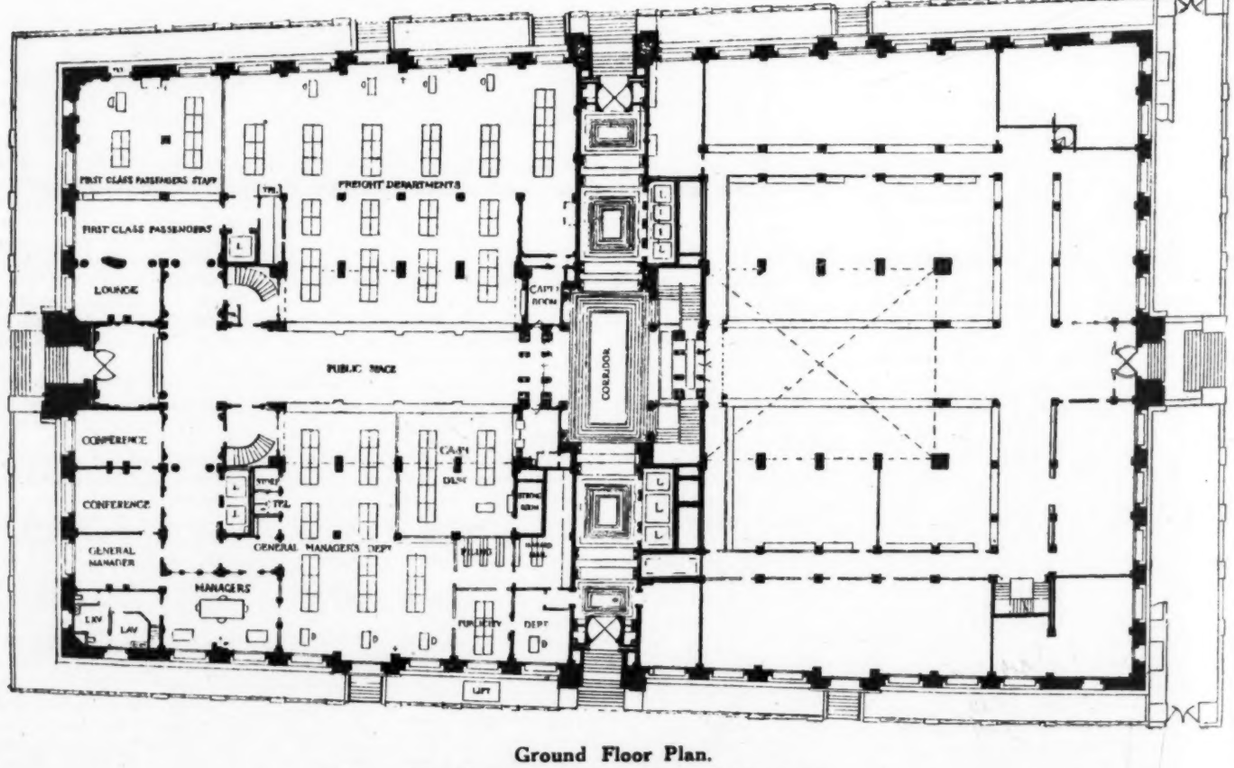
The motions were passed in silence, those present standing.

The Cunard Building, Liverpool.

MR. W. E. WILLINK then read a paper entitled "The Cunard Building." That building, he said, had no claim whatever to be considered as a work of imagination; it was simply an office building, large indeed in dimensions, and the home of many firms of world-wide interests, but merely an office building, in which economy, practical utility, comfort and convenience could never be disregarded. These qualities he thought he might claim it did possess. The man to whom the honour of reading the paper should have fallen was his late partner, Philip Thicknesse, who, to the deep grief and immeasurable loss of all who knew him, died in the early spring of last year; to him, and not to the speaker, was to be attributed by far the greater part of such credit as belonged to the structure. He would also like to mention the valued advice and assistance of Messrs. Mewes and Davis, who, in the person of Mr. Arthur Davis, were appointed by the Cunard Company to act as advisory architects. It was, indeed, due to Mr. Davis that the Italian Renaissance was adopted as the guiding style of the exterior, and his excellent judgment and power of design were of constant service both at the outset of operations and during the progress of the work. He would also be lacking in justice if he failed to acknowledge the work of Mr. J. Watson Cabrá, to whose robust and vigorous handling most of the detailing was committed until in 1916 he went to the war.

The site of the Cunard Building was an interesting one, bearing in mind, of course, the fact that Liverpool was for all practical purposes a modern town. The site was a dock across which the Corporation had continued two streets which butted on to it—Water-street and Brunswick-street. Thus the site was divided into three portions, each appropriate for the erection of an important building. That was a chance such as was seldom offered to a great city. The landing-stage, almost opposite the three sites, was the place where vast numbers of travellers from all countries, notably the United States, first found themselves on the soil of Europe, and how could there have been a finer opportunity for the worthy welcoming of our guests? The Dock Board made the first step and erected a very fine building for their offices, but one, unfortunately, too low, in his opinion, for modern requirements and possibilities. The Corporation sold the other end site to the Royal Liver Insurance Company, with the condition that any building put upon it must resemble the Dock Board Offices in height, material and design; a tall building was, however, erected. Under those conditions the architect thought the only possible thing to do was to put up a building of a design in all respects different from both.

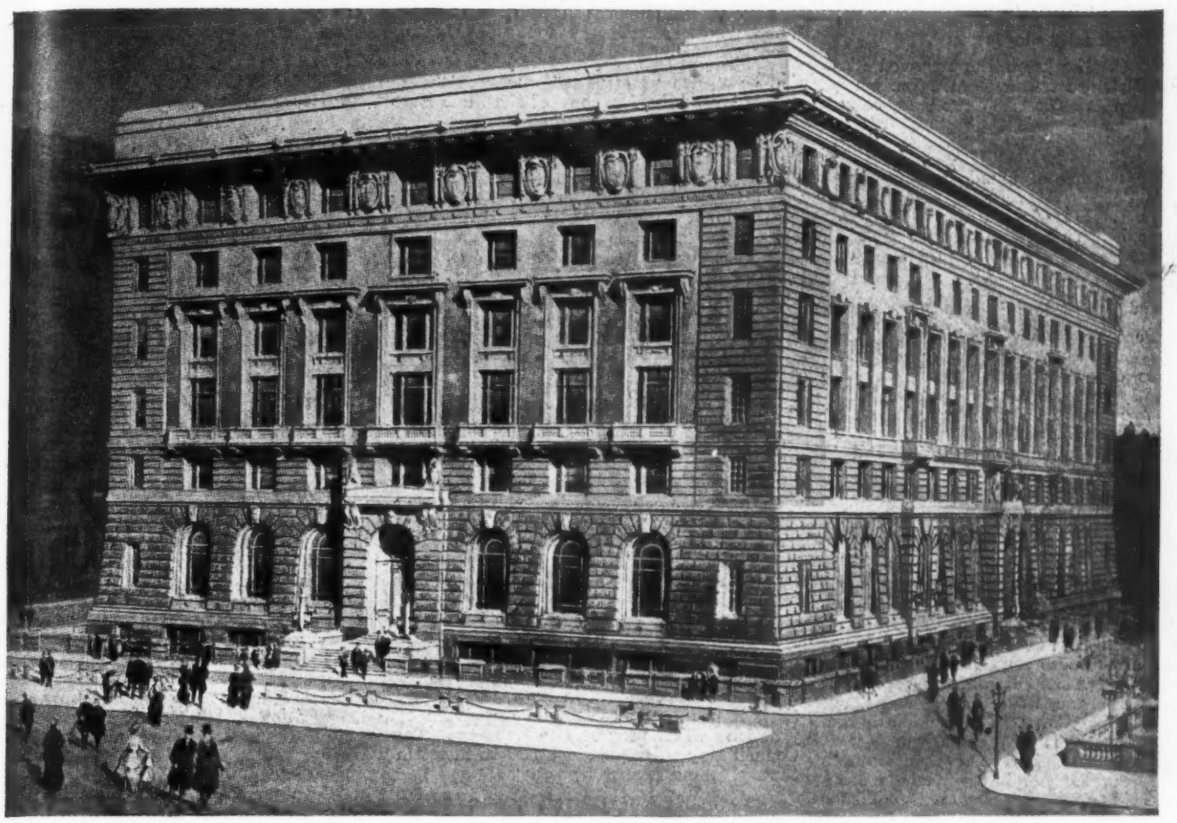
An initial difficulty was the presence of several feet of water in the old dock, which was pumped out. All the piers were taken down through the clay to the underlying rock. From the rock up to the basement mezzanine the piers were built in mass concrete; at that level the reinforced concrete began. The general flooring of the building was based upon a method first introduced and much used by the Trussed Concrete Steel Co. From main beam to main beam, in this case spans of 16 ft. or so, were carried small reinforced concrete beams spaced at 2 ft. centres. Between these small beams were placed in position corrugated iron formes, the top of which came to 2 in. below what would be the top of the beams. The whole was then filled in with fine concrete, all slightly reinforced. The top of the concrete was some 1½ ins. below the finished floor level, the difference being made up with cement rendering brought to a fine surface. Then came cork slabs, and finally linoleum. The slabs served two purposes, for they helped to give the linoleum floor resilience and warmth,



Ground Floor Plan.

The Cunard Building, Pierhead, Liverpool.

MESSRS. WILLINK & THICKNESSE, Architects; MESSRS. MEWES & DAVIS, Advisory Architects.



The Cunard Building, Pierhead, Liverpool.

MESSRS. WILLINK & THICKNESSE, Architects; MESSRS. MEWES & DAVIS, Advisory Architects.

and at the same time provided a convenient and easy way of leading wires for light, telephones, bells and the like, from the walls to interior positions. Through the small beams steel tubes were concreted in, for the purpose of conducting electric light wires without disturbance of the plaster ceiling, and on the sole of the small beams were boards of equal width, fixed by means of hoop-iron placed in position before concreting, and those served for the reception of fibrous ceiling slabs. The corrugated iron formes were so arranged that after the removal of the sheeting on which they stood they could be detached and used again, and most of them were so re-used three or four times. That floor had been found to be very successful, and had stood all tests, up to the moving of heavy safes.

As to the cornice, it was evident that the style adopted demanded a very heavy cornice; as a matter of fact the cornice actually projected nearly 7 ft. from the wall face. The construction of such a cornice was at first a puzzling problem, for they very naturally wished to have it all of stone. If constructed in the usual way enormous stones would have been needed, especially at the corners of the building—stones far bigger than could be obtained. So a system of reinforced concrete cantilevers was devised, anchored back to the main beams and projecting enough to render possible the use of none but stones of a very ordinary size.

The covering was of Portland stone, and there were a few points about it which he thought might be interesting. When they visited the quarries, they discovered that the Whitbed, which alone was generally used in outside work, was overlaid in the quarry with a thick bed of Roach. That was a shelly, rough stone, which could not be worked to a fine face, and was consequently seldom, if ever, used; but it was very hard and, without doubt, as durable as Whitbed, and it was felt to be the very thing for the rock-faced, battered base of the building, and they had had no reason to regret having used it. One regret, however, they did feel, and that was that that rock-faced work was sludged over with the rest of the stone work. On plain surfaces the sludge was easily removed, but on the rock face it was not, and it had to be chiselled off, much to the detriment of all the sharp arrises which gave crispness and character to such treatment. Rock-faced work should be protected, if at all, in some other way.

The spaces between the basement windows were made of flat rock-faced stones, in the hope that they would get the effect of huge blocks carrying the whole structure. Then came the heavily projecting, rock-faced batter, in which, though no attempt was made at continuity in the coursing, the vertical joints were less marked than the beds. The strongly marked rustication at the angles, above the batter, was built with coarsely sparrow-picked blocks, the holes being some 4 or 5 ins. apart. Then the whole story above the batter, the first floor, was, between the rusticated angles, built of stones grooved horizontally with fine lines, and above that was the ordinary rubbed surface. Those variations added some little interest to the design, and the way in which the material was affected by the elements in a soot-laden atmosphere gave some guarantee that the effect would not be ephemeral.

The planning of the building was very simple. An important doorway in the centre of each side gave access to a main corridor dividing the block into two halves equal and similar in all but width. On each side of that corridor on all floors above the ground was accommodation of one bay, 16 ft. in width, practically all given up to staircase, lifts and lavatories, &c., for principals and staff, men and women. The lavatories were drained into pipe ducts, 6 ft. by 2 ft. 6 ins., of which there were four running from the bottom to the top of the building, where they were open to the air, and thus out of doors, satisfying sanitary requirements. On the four lower floors, including the ground floor, the whole of the space covered by the building was utilised, but on all the floors above the ground floor each half of the building had in the middle of it an open area, about 60 ft. by 50 ft., lined with white tiles, giving excellent light to the offices—about 55 ft. wide between the areas and the streets. On the top floor of all there were all sorts of buildings, quite irregular in size and height—lift-houses, restaurant, kitchens and larders, and a couple of offices. Hence the plain screen wall above the cornice which hid all the diversified outlines from all except airmen.

The ground floor was some 8 ft. above the pavement, so as to allow for good windows to the lower ground floor rooms, some of which were of considerable importance. The ground floor was 23 ft. floor to floor, all floors above it 14 ft., except the second floor, which was 16 ft. The height of the corona was 110 ft. above the pavement, and the screen wall about 10 ft. more. The total length of the building was 330 ft., the breadth at the pier-head end 170 ft., and at the city end 200 ft.

Speaking quite generally, the style of the exterior was Italian Renaissance, though he did not claim that chapter and verse could be given for all the details. The general scheme, however, was quite normal. The strong rock-faced base, battered or vertical, was common. The ground and mezzanine floors under the main floor was not unknown. The Pians Nobile, in this case represented by the second and third floors linked together by the architraves, was universal, and the intermediate floor between the window canopies and the frieze did not seem to be out of place. Then there was the feature of a frieze large enough to contain the fifth-floor

windows, and then the cornice and the parapet wall. Allowance must, of course, be claimed for the relatively large number of floors required, and for the comparatively low height of the floors; and also for the larger number of windows and their breadth, and the consequent small proportion of plain wall surface. These very important differences forced one to abandon any claim to call the style Italian Renaissance, and to describe the design merely as an adaptation of that charming style to modern requirements and a somewhat sunless climate.

The building was entered through the revolving doors at each end of the main cross corridor. That corridor was clothed with Subiaco marble, a material of a very pleasant cream colour. The main columns were Doric, reaching up to the ceiling, with a Greek lower order between them. In the centre the corridor was widened, to give importance to the main entrance to the Cunard Public Offices on the one side and that of the Pacific Steamship Company on the other. These were the only offices which ran in widths from street to street, utilising for office purposes the area spaces from which they derived much of their light. The piers and walls of the Cunard Office were covered with a white grey-veined marble, Arni Alto by name, which reflected the light wonderfully well. The columns under the skylights, apparently magnificent green monoliths, were, alas! Scagliola, and the columns were really ventilation trunks. The piers in the Pacific Office were plastered and painted, with a good deal of gilding—marble could not be obtained in sufficient quantity when that office was fitted up. A feature of the Cunard Office was a corridor parallel to the river front, running from the General Manager's department to the first-class booking counter, adjacent to which was a lounge for first-class passengers. The marble for those columns was Pentelicon, and that for the lower order Crestola, one of the Carrara series, very similar to the Arni Alto. From that corridor a staircase led down to the lower ground floor, where adequate accommodation of all sorts was provided for clerks, second and third-class passengers, &c., and from it also three special lifts ran up to the fifth floor, the whole of which was given up to the non-public requirements of the Company.

In all the offices, large and small, a notable divergence would be observed from the old-fashioned office. Doors were glazed right down to the bottom rail, dividing walls were avoided as far as possible, their purpose being served by 7 ft. framing with uninterrupted plate glass from them to the ceiling. A general air of spaciousness was noticeable, and in most cases the piers were plastered in a decorative manner and painted cream colour. The impulse in that direction came from America, where such offices abounded, but he could not help thinking that all future great office buildings would have to conform to a greater or less degree. It was a serious matter, for with the spaciousness, which was not only apparent but real, the new accommodation required for lady clerks, rest-rooms and tea-rooms for all the staff, lavatories, dining-rooms, smoke-rooms, and the like, he had very little doubt that what would in the future be considered adequate would take up at least twice the cubic measurement which used to be thought sufficient. Luxuries, if really of advantage, had a way of becoming necessities, and if ever that extended accommodation became universal, the result in the business areas of our great cities would be enormous, and unless much larger slices of the cities were handed over for office buildings the extension would of necessity have to be in a vertical direction.

The temperature in the offices had been dealt with in the usual way, for the whole building was heated by radiators with forced circulation of low-pressure hot water; but in private offices, and, indeed, wherever it was considered necessary, ordinary fireplaces could be added. The smoke from these passed through steel tubes up, level, or down, as circumstances demanded, to fans driven by electricity, which expelled it. There was, therefore, only one chimney stack, that for the boiler fires. The system worked admirably.

The fitting up of the offices, most of which had been done by the architects, had been very interesting work. No ruling style had been adopted, and there was great variety. There were instances of Jacobean, Georgian, Neo-Grec, Empire, and severely practical. The innocuous conducting of the pipes and wires for the internal works of all sorts had needed much thought, for the requirements of modern offices were numerous and exacting.

The whole of the general contractor's work was carried out without contract, on the principle so common in shipbuilding, and almost universal during the war, of cost-plus-profit. And though that method had worked badly in many cases, in that instance he felt sure it was the wisest that could have been adopted. It all depended upon the honourable character of the contractors, and as they were so fortunate as to have Messrs. Cubitt & Co. in that capacity they were safe. In the calculation the Cunard Company were taken as tenants, and their fitting up was not taken into account. But including all the landlord's work, the building, the heating, drainage, lavatories, lighting, lifts, &c., and not omitting the marble decoration of the main cross corridor, the cost of the whole worked out to 1s. 2d. per cubic foot. That price seemed absurd now, and seeing that almost the whole was carried out during the war, he thought it was rather remarkable, and a justification of the methods adopted.

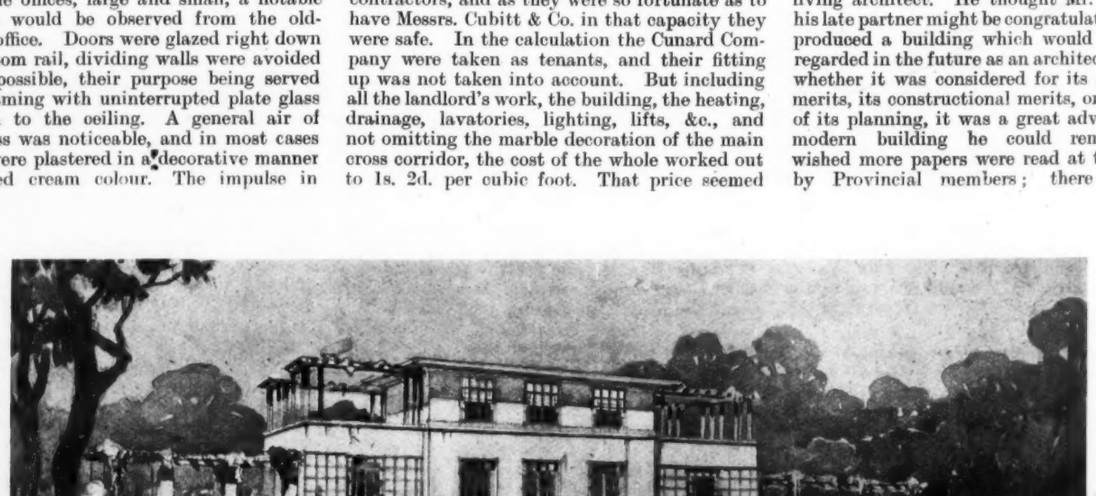
The paper was illustrated with a large number of lantern slides, showing the building in course of construction and interior and exterior views.

Discussion.

PROFESSOR S. D. ADSHEAD moved a vote of thanks to the lecturer, and said it gave him special pleasure to do so because he regarded the Cunard Building as one of the finest buildings erected in this country for a considerable number of years; he thought he was quite sound in saying it was the finest office building. His opinion as to the excellence of its exterior was enlarged by the views he had seen that night of its beautiful interior. The building had been the subject of great engineering and constructional problems, which had been very skilfully managed. It was a very beautiful building, and combined extraordinary scientific and practical attainment with the very highest artistic qualities. He would like to know the connection between the reinforced concrete and the Portland stone exterior—whether the stone stood by itself or whether it was attached to the building as an encasement.

MR. DESCH (Director of the Cunard Company), in seconding the vote, said he did not know of anything with which he had been connected that had left more pleasant memories than his association with Mr. Willink and the late Mr. Thicknesse. The work went on with extraordinary smoothness considering the difficulties, and if there had not been co-operation between the architects and everyone connected with the building there would not have been such satisfactory results.

MR. A. W. S. CROSS congratulated Mr. Willink on the great success of the building. They had all admired the architecture, planning, arrangement and scheme of decoration generally, and he though all of them had been staggered by the cost. They would all like to know how a similar building could be erected now at the same price. In these days, 1s. 2d. per cubic foot for such a palatial building seemed utterly beyond the powers of any living architect. He thought Mr. Willink and his late partner might be congratulated on having produced a building which would certainly be regarded in the future as an architectural epoch; whether it was considered for its architectural merits, its constructional merits, or the fineness of its planning, it was a great advance on any modern building he could remember. He wished more papers were read at the Institute by Provincial members; there should be



House at Welwyn Garden City.

MR. LOUIS DE SOISSONS, A.R.I.B.A., S.A.D.G., Architect. (*See p.* 222.)

papers by Provincial members read at every session.

MR. GEORGE HUBBARD said he thought the Cunard Building was one of the very finest buildings put up within the memory of any of those present. He was sure it would hold its place in future and stand out as a monument of the present era.

MR. GILBEE SCOTT said he had just received tenders for a reinforced concrete factory in London at 2s. 10d. per foot cube.

MR. H. M. FLETCHER said the Cunard Building was always done less justice to in illustrations than any other building he knew. The extraordinary imposing effect of the building when seen from a short distance was due to the depth of reveal in the ground floor openings, which was lost to a considerable extent in reproduction. Most of the illustrations did not give the great effect of solidity which was seen in the building itself.

THE CHAIRMAN said it was one of the most interesting papers read before the Royal Institute for many months. They must congratulate Messrs. Willink and Thicknesse on having been given the opportunity to erect such a wonderful building. It fell to the lot of very few architects in England to-day to have an opportunity of designing a building on an island site, unrestricted by any trammels of light and air, and upon what he thought was one of the finest sites in the world. The series of buildings—St. Nicholas Church, the Liver Building, the Cunard Building, and the Dock Board Offices, with the growing Cathedral on the far horizon—was one of the most beautiful pictures one could have on any waterway. The great opportunity had been seized in a wonderful way. He was particularly struck with the simplicity of the planning. The two cross corridors dividing the building into four quarters was a very clever and ingenious manner of arranging the offices.

MR. HURST (Consulting Engineer for the structural part of the building) said the cornice was a very difficult piece of work owing to the wide overhang, which was six feet from the wall face and seven feet from the columns. It was carried out by the use of reinforced concrete cantilevers the full depth of the cornice, hidden from sight by the modillion below it. These cantilevers occurred every four or five feet.

The vote of thanks was accorded with acclamation, and in a brief reply MR. WILLINK said he thought there would have been many criticisms and some expressions of opinion given as to the length to which one could go in taking liberties with a style. It was a very difficult point and one which varied for each architect, partly with the temperament of the designer and partly with the amount of education he had in the style he was dealing with. In reply to Mr. Adshead's question, the Portland stone covering was put on to the reinforced concrete; the stone would very nearly stand by itself, but not quite.

Special General Meeting.

The HONORARY SECRETARY announced that a Special General Meeting would be held on February 28, at 8 p.m., for the election of the Royal Gold Medallist for 1921 (Sir Edwin L. Lutyens, R.A.). A Business Meeting will follow for the election of members, for the discussion of conditions for housing competitions proposed to be introduced into the Regulations for Architectural Competitions, for the discussion of proposals for the amendment of the by-laws respecting the classes of Honorary Associates and Retired Fellows, and for the creation of a new non-professional class to be designated "Subscribers."

Barnsley War Memorial.

The Barnsley War Memorial Committee has asked the Corporation to allocate part of the site of the proposed new Town Hall for the erection of the war memorial, the cost of which is not to exceed £10,000, and to appoint Mr. John Tweed as sculptor.

Bungalow at Welwyn Garden City.
MR. LOUIS DE SOISSONS, A.R.I.B.A., S.A.D.G., Architect. (*See p.* 222.)

"IS ARCHITECTURE WORTH WHILE?"

AT a popular lecture at the Manchester University recently, organised by the Manchester Branch of the Institute of Builders in conjunction with the Manchester Society of Architects, with the object of cultivating the public interest in architecture, Mr. Paul Waterhouse entitled his subject, "Is Architecture Worth While?"

Even accepting, he said, that an architect was merely an organising person who prearranged the uses of materials, architecture was worth while, inasmuch as it prevented materials being handled in a wasteful and costly way. The mere preliminary arrangement for the use of materials, though not in itself architecture, became architecture when handled with knowledge and skill, knowledge of style, super-added to skill in arrangement. Architecture in the high art sense was not a sort of luxury which only rich men and rich corporations could afford. No one could say what was really a luxury and what necessity. To-day everybody wanted buildings. Was it unnecessary that they should be architectural? The cottage and the small house were being standardised by the Government; he realised that costs must be cut down to the minimum, but was surprised that the public had abandoned itself to the idea that the lithographic types issued by the Government were the only types that could be adhered to.

Great knowledge and sound knowledge were necessary for the architect. It was a mistake to think that these qualifications contributed to complications. On the contrary, they made for simplicity The absence of them had led to many fine buildings being spoiled by the architects of the nineteenth century. He suggested that a good deal of the bad architecture now seen was in a measure owing to the Gothic revival. That revival was a mischief-maker in the sense that it led to the exact opposite of the intentions of the movement. There sprang up alongside the Gothic period a race of designers recruited from the old stagers who mutilated the classic form. They thought that they must be in the swim, that the public was getting to like free art, and they said, "We can be as free as any one else."

It was a characteristic of all true architecture that it must conform to the past, or else it failed. Architecture was a language, not only between the public and their contemporaries, but linking them to the future and to the past. A good architect did not worry himself with whether he was working "by the book," for great traditions were so embedded in him that he "got there." Architecture was not an addition to building, but a synonym for skill and excellence in building. Architecture did not lead to expense, but expense led to architecture. The public was mistaken when saying that the architect made buildings more expensive. That was not the case. They must have something better than a pig-sty, and the architect, while controlling the expense, was the man to make it something better. Good architecture, all through the ages, had, and would have, an elevating influence on mankind.

THE LONDON SOCIETY.

AT a meeting of the London Society on Friday last week, MR. THOMAS WILSON, Clerk of Works to the Houses of Parliament, delivered a lecture, entitled "The History of the Houses of Parliament." The chair was occupied by MR. JAMES W. LOWTHER, the Speaker.

MR. WILSON said that of all the ancient buildings which existed at the great fire of 1834, which destroyed the Old Palace of Westminster, none had such a brilliant and tragic history as St. Stephen's Chapel, which was used since the reign of Edward IV as the Chamber of the Commons. Its origins were indefinite, but it appeared to have been founded about 70 years after the Conquest. Edward III was usually regarded as the builder, as Stephen was its founder. The building contained a series of remarkable and beautiful wall paintings which were covered by wainscotting when it was first used by the Commons. In 1800 it was found necessary to take down the wainscotting put up by Wren in order to cut back the wall some 2ft. between the buttresses to give the necessary space for additional seats for the Irish members. Behind this panelling the paintings were rediscovered, and for the last time there was disclosed to human sight a fleeting glimpse of those gorgeous mediæval wall decorations, sculpture, and stained glass which made St. Stephen's Chapel a shrine of English art in the fourteenth century.

Leading Contents.

	PAGE
SOME THOUGHTS ON WAR MEMORIALS	211
AN AMERICAN VIEW OF WAR MEMORIALS	216
FRANCO-BRITISH EXHIBITION OF TEXTILES	216
MODERNISM AND DESIGN	216
ARCHITECTURAL SOCIETIES	217
R.I.B.A.	218
"IS ARCHITECTURE WORTH WHILE?"	221
SOME DIFFERENCES BETWEEN ENGLISH AND AMERICAN ARCHITECTURAL OFFICE PRACTICE	227
PROPOSED GIRLS' HIGH SCHOOL, BURTON-ON-TRENT	229
THE EFFICIENCY EXHIBITION	230
EXCAVATIONS FOR MESSRS. PETER ROBINSON'S NEW PREMISES	231
THE INDUSTRIAL COUNCIL FOR THE BUILDING INDUSTRY	232
CONVERSION OF HOUSES INTO FLATS	233
EDUCATION OF APPRENTICES IN THE BUILDING INDUSTRY	234
INDUSTRIAL STATISTICS, 1920	235

ILLUSTRATIONS.

Welwyn Garden City.

In the lay-out of this scheme an effort has been made to design as a whole a pleasant and well-wooded site, and to take full advantage of its possibilities and of the peculiar conditions arising from the fact that flat-roofed cottages are to be built. The cottages illustrated are examples of the general arrangement that is proposed. Windows have been kept large, and extend up to the ceiling, so as to ensure the maximum light to the further side of the rooms, and good ventilation. The cottages are planned as small houses with hall and good staircase, not the straight-up ladder type of stairs. Certain of them are to be built in rammed chalk twenty parts chalk, one cement) following the Ministry of Agriculture's experiments at Amesbury. Others will be in 4½ in. hollow brick with outer 4½ in. red facing bricks made on the estate.

The reasons for adopting the flat-roof mode of construction are: (1) Shortage of roofing tiles which is the only roofing material the Company wishes to use in the Garden City; (2) economy in construction; (3) simplification in planning and greater freedom, as the roof plan does not need to be considered; (4) simplification in drainage of storm water, as the roofs are arranged to slope to back and only one series of rain-water down pipes is required; (5) the possibility of being able to break up the building line to a greater extent, and to introduce a greater variety of line in plan.

The houses have been designed to comply with the conditions of the Government assistance to public utility societies.

The scheme is the work of Mr. Louis de Soissons, A.R.I.B.A., S.A.D.G., architect to Welwyn Garden City, Ltd.

The Steps, Rye Church Tower.

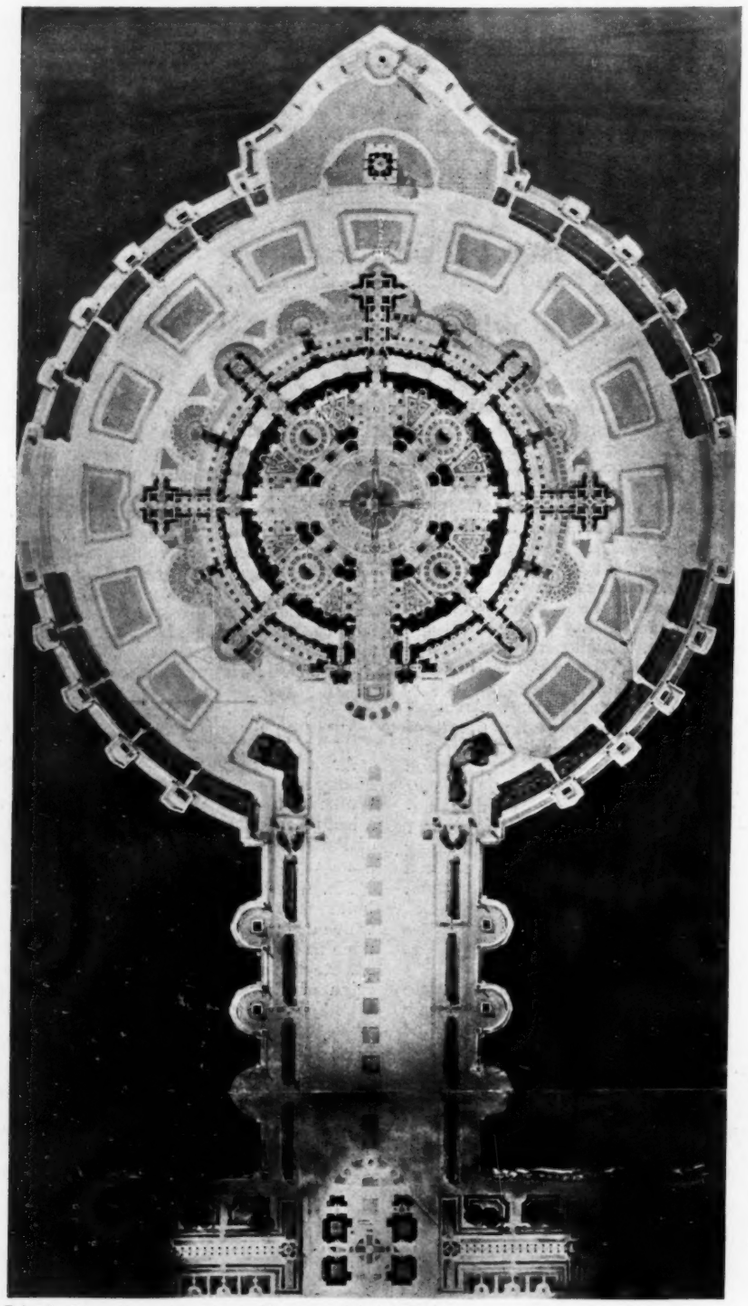
This is a chalk drawing, by Mr. Austin Blomfield, of the early seventeenth century oak steps inside the tower of the Parish Church, Rye. The staircase leads to the belfry and from there to the famous Quarter Boys at the top of the tower.

The Colossi of Thebes.

We illustrate this week another of the Egyptian sketches by Mr. Fitz-Roy H. Darke. The Colossi of Thebes are so well known as hardly to need description. These two statues represent Amenhotep III, 1411 to 1375 B.C., and were situated in front of the pylon of his mortuary temple, of which nothing is now left. The small figure to be noticed by the knee of the near statue is that of the Pharoah's wife, Queen Thiy. Both figures were originally monolithic, but the northern one was injured in an earthquake in 27 B.C., and the restoration in coursed stone was made about A.D. 200 by the Emperor Septimius Severus.

Prix de Rome Competition.

We illustrate this week the three remaining designs of the seven selected for the final competition in the Prix de Rome Competition in Architecture. These are by Mr. Bernard George and Mr. James H. White, of the Architectural Association Atelier, and Mr. Bernard A. Miller, of the Liverpool School of Architecture. The four other designs were illustrated in our last issue.



Prix de Rome Competition in Architecture: Selected Designs.

Plan.

By MR. BERNARD A. MILLER (Liverpool School of Architecture). (*See p.* 223.)

MEETINGS.

FRIDAY, *February* 18.

Auctioneers' and Estate Agents' Institute.—Mr. A. J. Burrows on "The Agricultural Act, 1920." At 34, Russell-square, W.C.1. 2.30 p.m.

SATURDAY, *February* 19.

Architectural Association.—Visit to Metropolitan Water Board. 2.30 p.m.

TUESDAY, *February* 22.

Liverpool Architectural Society.—Mr. W. F. Willink on "The Cunard Building." At 13, Harrington-street, Liverpool. 5.30 p.m.

L.C.C. Central School of Arts and Crafts.—Miss C. R. Gordon on "Furnishing on Small Means." At Southampton-row, W.C. 5.30 p.m.

WEDNESDAY, *February* 23.

Surveyors' Institution.—Visit to Efficiency Exhibition, Olympia. 3 p.m.

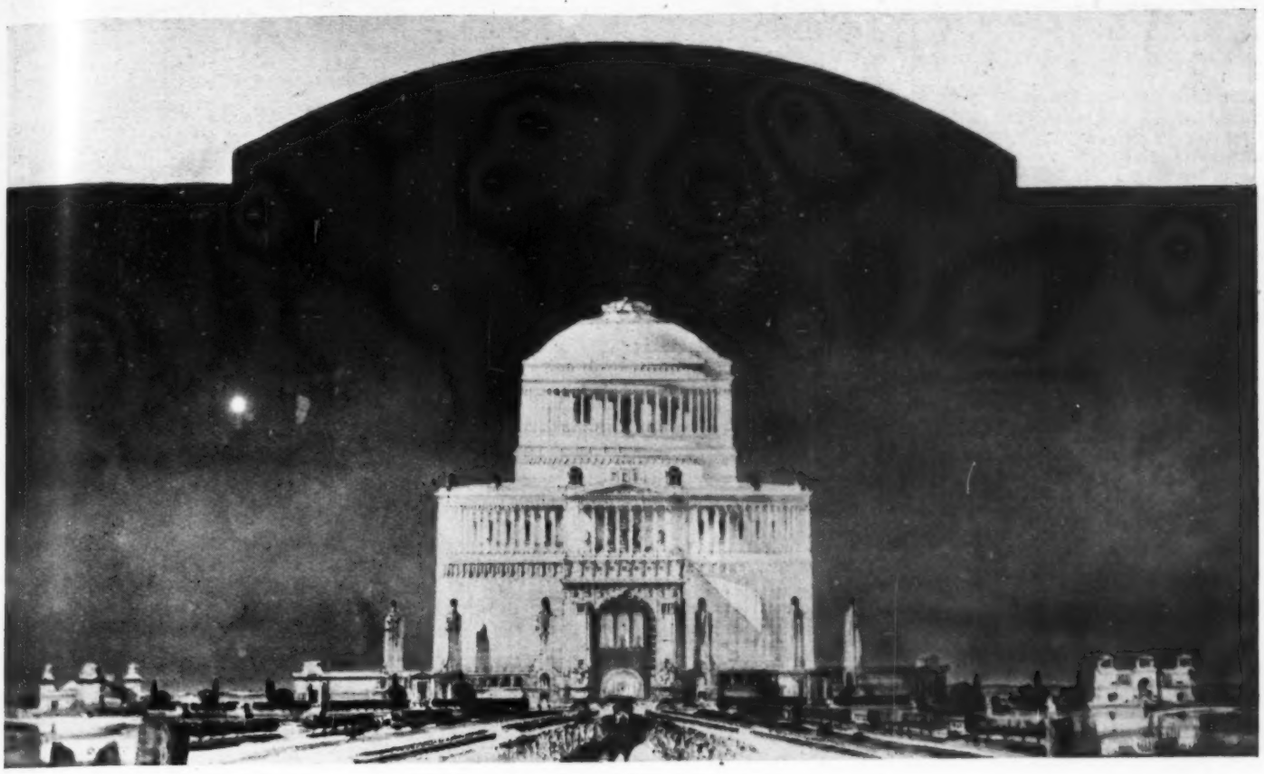
British Museum Lectures on Ancient Architecture.—Sir Banister Fletcher, F.R.I.B.A., on "Roman Architecture: The Palaces of the Emperors; The Houses of the Romans; Pompeian Art." At Bloomsbury. 4.30 p.m.

THURSDAY, *February* 24.

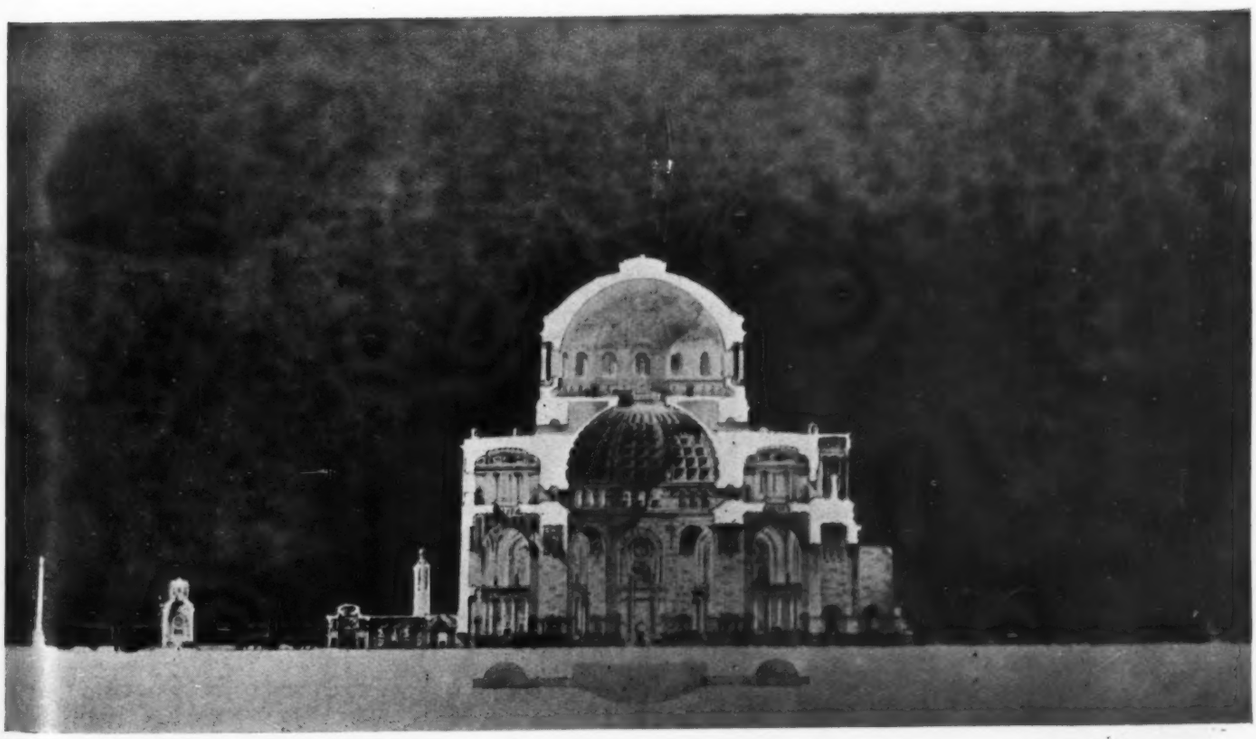
Provident Institution of Builders' Foremen and Clerks of Works.—Annual Dinner. At Holborn Restaurant. 6.15 p.m.

Concrete Institute.—Mr. E. S. Andrews on "Methods of Securing Impermeability in Concrete." At 296, Vauxhall Bridge-road, S.W.1. 7.30 p.m.

Edinburgh Architectural Association.—Mr. W. F. Gray on "George-square: Its History and Romance, 1766–1820." At 117, George-street, Edinburgh.



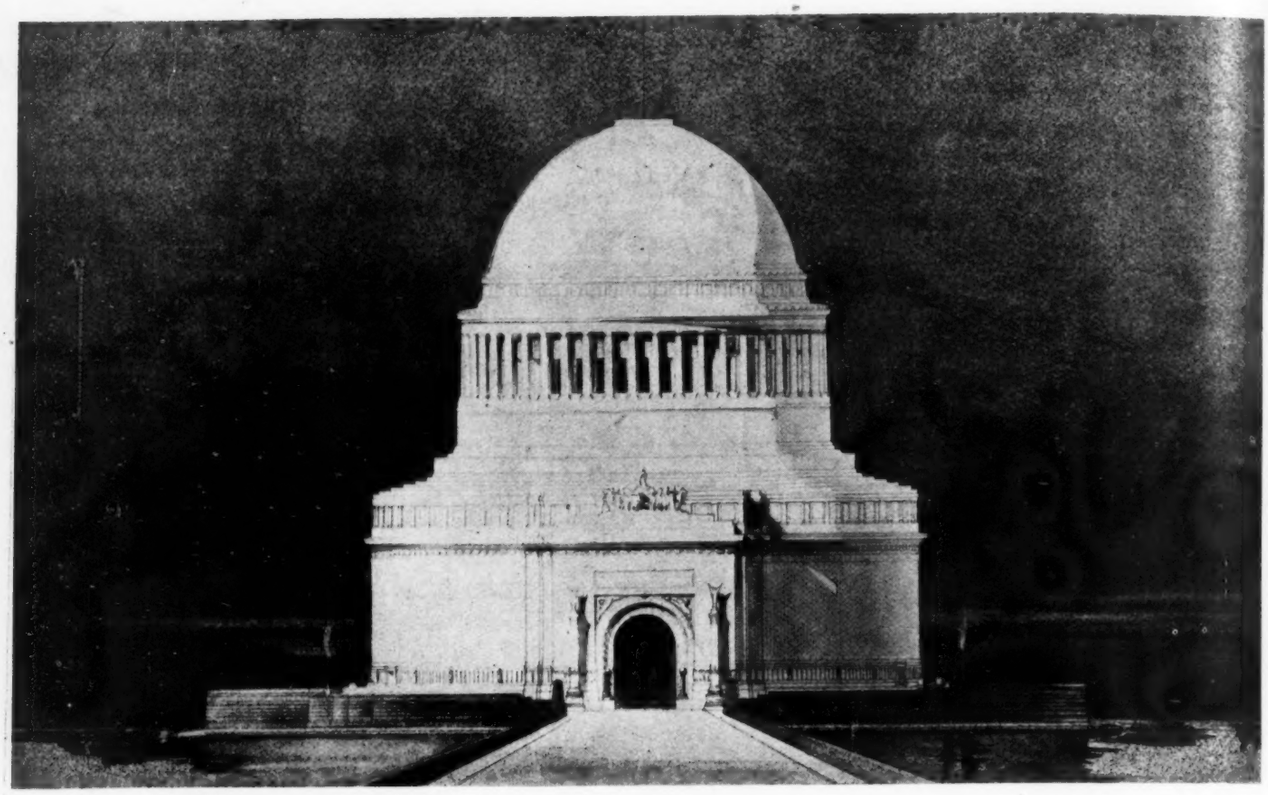
ELEVATION.



Prix de Rome Competition in Architecture: Selected Designs.

SECTION.

Design by MR. BERNARD A. MILLER (Liverpool School of Architecture).



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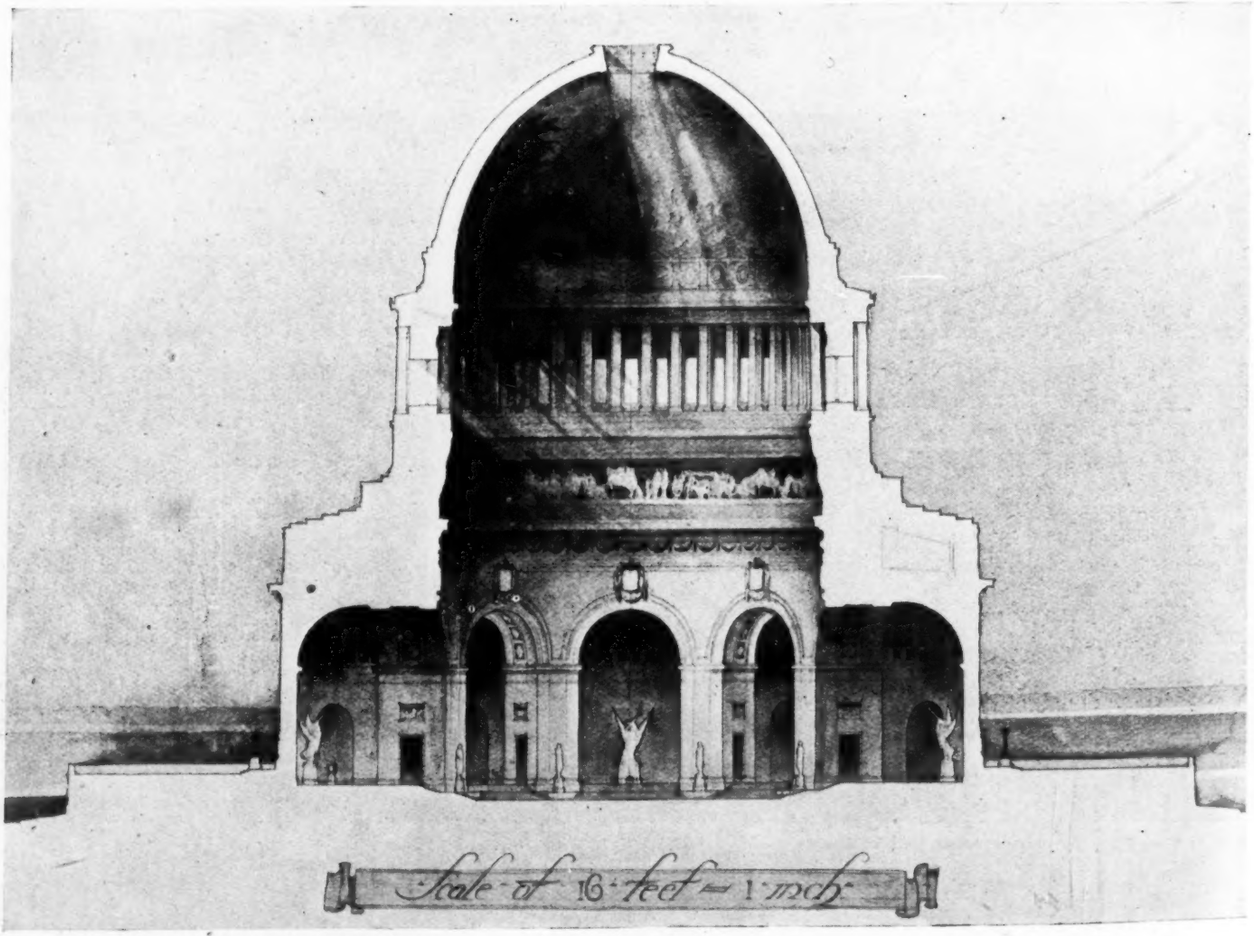

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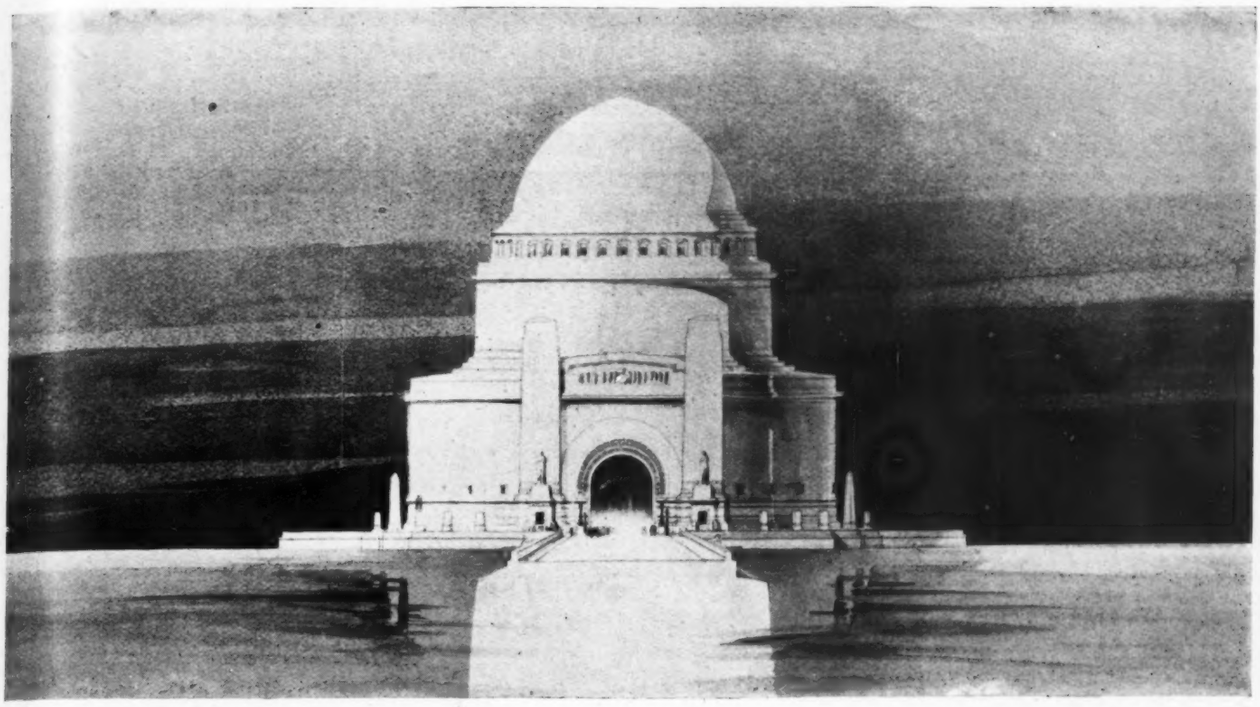

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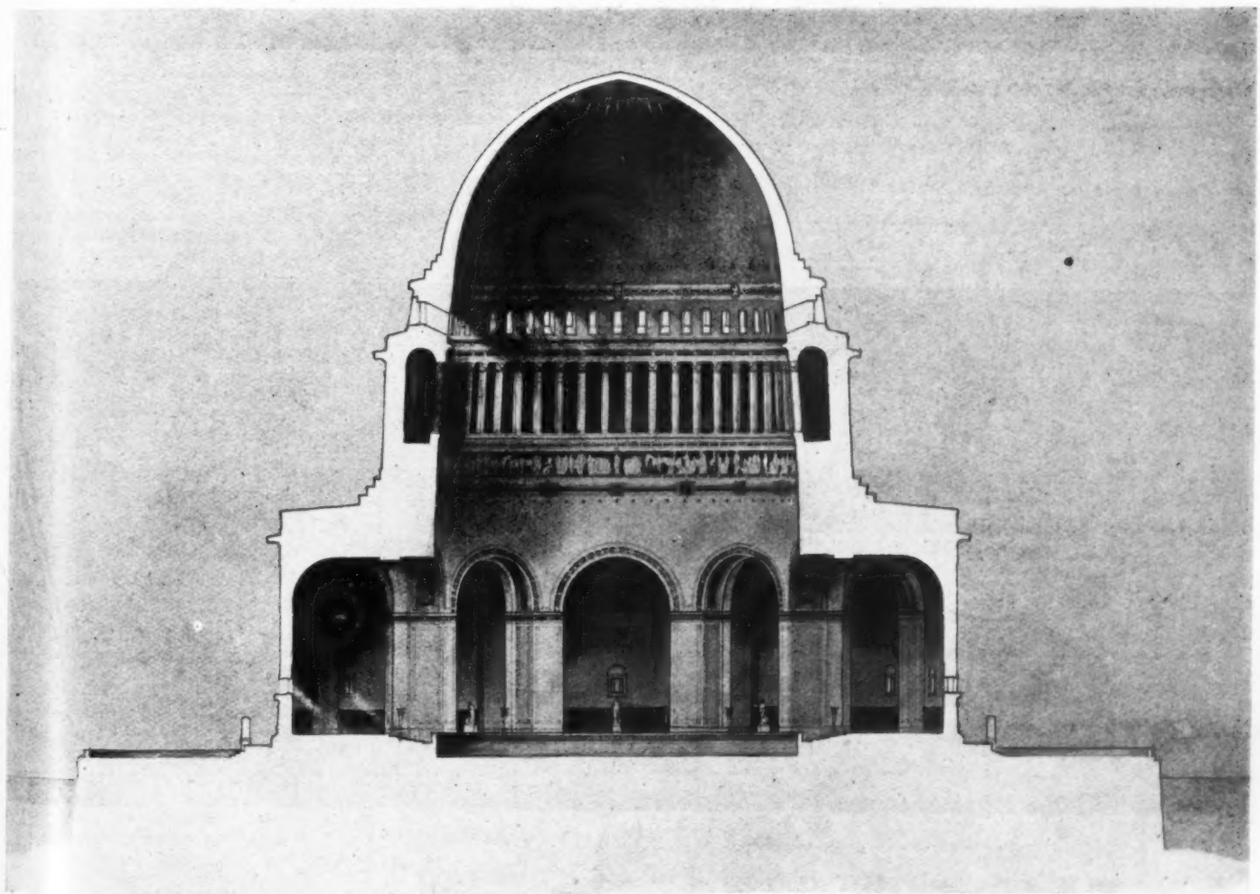


Prix de Rome Competition in Architecture: Selected Designs.

SECTION.

Design by MR. JAMES H. WHITE (Architectural Association Atelier).

PLANS.

By MR. BERNARD GEORGE (Architectural Association Atelier).
(See p. 224.)

Prix de Rome Competition in Architecture: Selected Designs.

By MR. JAMES H. WHITE (Architectural Association Atelier).
(See p. 225.)

SOME DIFFERENCES BETWEEN ENGLISH AND AMERICAN ARCHITECTURAL OFFICE PRACTICE.

By E. W. MARTIN.

IT is quite natural that there should be many differences between the methods employed in the offices of English and American architects. When one considers that three thousand miles of ocean separate the two countries, that different business customs and different methods of building obtain there from those which obtain in England, it would seem strange if there were not differences; one would, I think, expect very striking ones. So I must confess that the thing which struck me most when I came to this country and entered the employ of an English architect was the fact that there was such a great similarity between the methods pursued in America and those commonly followed here. I had quite persuaded myself that I should not be a great deal of use in the office of an English architect. I was sure the constructional methods would be new to me, and in many respects the manner of making working drawings. I was afraid I should be more of a hindrance than a help. However, I gathered up my courage and presented myself to an English architect. I told him what I had done in the States, and as additional evidence showed him blue-prints of drawings I had made. He seemed satisfied with these examples of my draughtsmanship, and engaged me. And then the surprise came. I found I fitted perfectly in my new surroundings and had no trouble at all in taking up the regular office routine of making sketches, $\frac{1}{8}$-in. scale working drawings, $\frac{1}{2}$-in. scale, and full-size details.

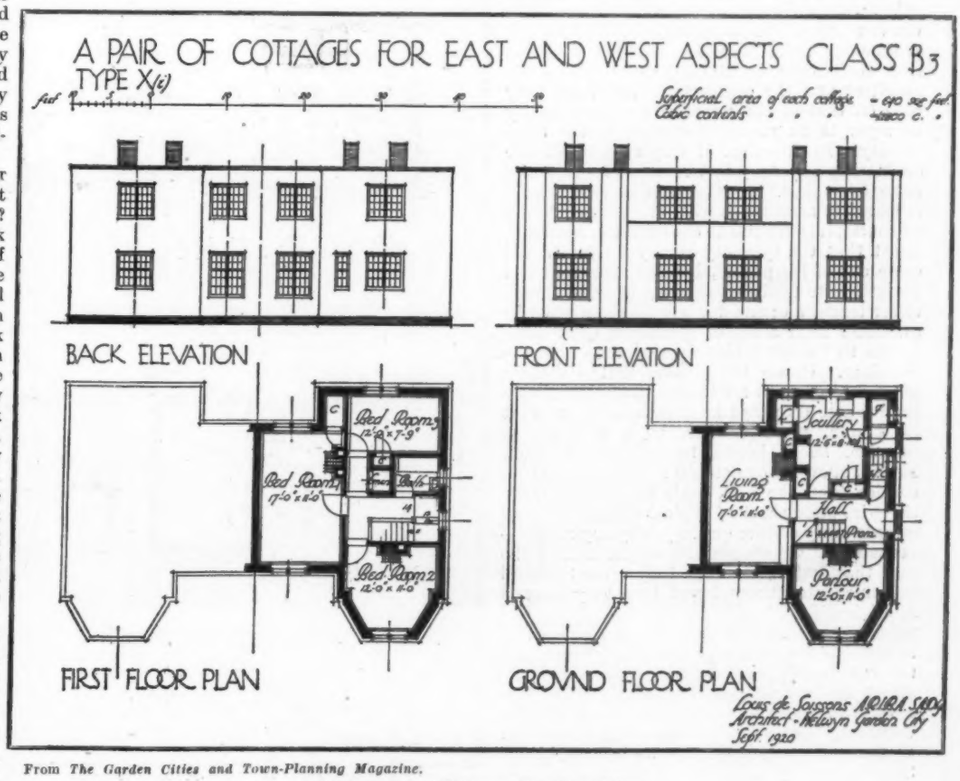
At first I could not get used to that condition of things. I had been afraid lest I should be more or less in the way, and here I was performing my duties as an architectural assistant just as easily as though I had merely changed from one office to another in the States. Surely something was wrong. Then it occurred to me to compare in some detail the methods of doing things here and in America; and after I had done so I came to the conclusion that a great many similarities existed and comparatively few differences. But, nevertheless, to me these differences were extremely interesting and instructive, and it is my purpose here to outline a few of them. In view of the fact that my American experience has been more extended than my English, I shall confine myself largely to American practice and make comparisons with English methods where it seems advisable.

Among the first questions which the other assistants in the office put to me were: "Don't they rush you terribly in American offices? Don't you have to turn out a fearful lot of work every day—far more than we do here?" Of course, at that time I could not answer those queries because I had not been in England long enough to tell, but I can answer them now. And my answer is that they do not work any harder in an American office than in an English one. In the average American office an assistant works steadily and usually very thoroughly. He is expected to do his work accurately and neatly, but he is seldom rushed. Indeed, I believe an assistant has to hurry more in England than he does in America. In the latter country the hurry and bustle is, I am inclined to think, often more apparent than real. Many a time I have seen a young fellow scurrying along the street with a terrific stride and a frenzied eye as though he had made up his mind to be at his objective in the next five minutes or know the reason why. A perfect example, one would say, of the American "get there" spirit. But just watch this keen-eyed young enthusiast. See, he has noticed a man standing there by the curb selling a new patent contraption for tying a four-in-hand tie. He stops suddenly, like an automobile with the "emergencies" on. He jams his hands into his pockets and gazes, along with other enchanted souls, lost in a mild wonder. Where is his objective? It is as dim to him now as home to the lotus-eaters. Suddenly he bethinks himself and strides off again, his eye full of fire—once more the perfect example of "get there!" No; I am afraid in many cases American hustle is more apparent than real. The average American is no more energetic than the average Englishman. And I am sure life in an American architect's office is no more strenuous than in an English one. But I pass on to more specific differences and similarities.

Perhaps the simplest way of bringing these out—although it may necessitate a few digressions and some jumping about—is for me to take a job and carry it through an American office from the time the first sketch is shown to the client to the time of completion of the last full-size detail, calling attention from time to time to the manner in which a similar problem is handled in an English office. Of course, the most important step of all comes immediately before handing the sketch to the client; but that is one of which I can say little. It is known in the States as "landing the job," and is sometimes, I am told, an extremely delicate and difficult operation. However, we shall omit that step and imagine the job has been "landed." Let us suppose it is a country residence to cost $200,000 at pre-war figures. Now, in the American office I particularly have in mind the senior member of the firm nearly always does his own designing; he usually makes the preliminary lay-outs for the building, and presents his ideas to the client in the form of a pen-and-ink, charcoal, or water-colour sketch—and very beautifully delineated it usually is. The client takes this sketch home, goes over it with his wife, and brings it back generally with certain ideas of his own to suggest. The architect then turns this sketch over to a draughtsman and instructs him to lay out the building to $\frac{1}{4}$-in. scale in pencil on thin, dull, white tracing paper (called "detail paper" in England). This the draughtsman does, including, perhaps, the main elevations and the plans of the basement, first floor (called ground floor in England), second floor (English first floor), &c. These drawings are made quite accurately, but no dimensions are put on them. Blue-prints are then made from them, and these are sent to the client for further approval and suggestions.

Now, the differences to be noted here as regards English practice are—first, in many cases, I have noticed that the English architect simply lays a piece of tracing cloth over his preliminary $\frac{1}{4}$-in. scale water-colour sketch and traces it for the final drawing he intends to send to the quantity surveyor and subsequently to the builder—especially if the job is not a very large one; and, second, that he seldom uses blue-prints, preferring white-prints. But I shall return to the important matter of prints later.

After these prints have been sent back by the client and certain other changes have been suggested by him, the tracing-paper drawings are again turned over to the same draughtsman (the same man is kept on the one job wherever it is possible, so that he will become thoroughly familiar with it), and he is asked to make the necessary corrections, add all minor elevations, plans, and sections, and trace them in ink on linen for the final drawings. At this stage he puts few, if any, dimensions on the sheets. His present idea is to turn out a set of drawings for estimating purposes only. And, for estimating, an accurate drawing without figures is quite adequate, because the contractor figuring from it can scale it for all the measurements he requires. Then, if the tenders prove to be too high, and extensive alterations have to be made to the drawings before the work can go ahead, no time has been wasted in useless dimensioning. After the draughtsman has brought the tracings to a state of completion with the exception of the dimensions—that is, after he has hatched the walls where they are brick, stippled them where they are stone, and shown concrete in its own way, indicated directions and sizes of joists, rafters, &c., lettered on the plans the type of floor to be used, and the kind of wood finish in all rooms, shown flues, all stationary fixtures, all door swings, and numerous other details—the drawings are turned over to the chief draughtsman for his approval. The chief draughtsman, usually a man of long experience in



From *The Garden Cities and Town-Planning Magazine.*

Cottages at Welwyn Garden City.

MR. LOUIS DE SOISSONS, A.R.I.B.A., S.A.D.G., Architect. (*See p.* 222.)

PLANS.
By MR. BERNARD GEORGE (Architectural Association Atelier). (*See p.* 224.)
Prix de Rome Competition in Architecture: Selected Designs.
By MR. JAMES H. WHITE (Architectural Association Atelier). (*See p.* 225.)

the office, goes over the sheets with a great deal of care to see that everything necessary for estimating purposes has been included. Then, after the architects themselves have approved of them, a certain number of sets of blue-prints are made, and these are turned over to the contractors from which to estimate. Along with this set of ¼-in. scale drawings the architect usually gives to the contractors one sheet of typical ½-in. scale details, showing, perhaps, the main entrance, section through the front wall, detail of main cornice, and general exterior and interior finish—much the same sort of drawing the English architect issues to the quantity surveyor before the latter gets out his bill of quantities.

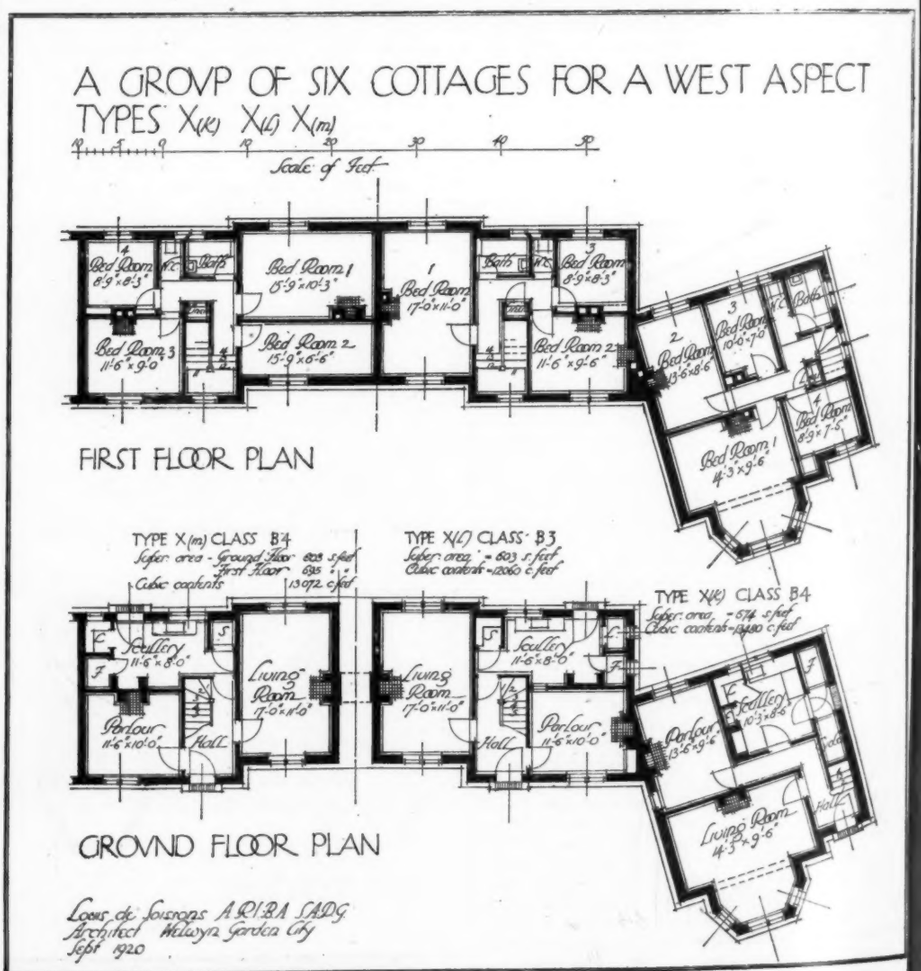
During the time the draughtsman has been preparing these drawings, the "specification man" in the office has been busy writing the specifications. In a good American office the specifications are prepared very thoroughly. Every detail of construction is gone into. Nothing is thought too small to be considered. A great deal of the information which the English quantity surveyor includes in his quantities the American architect has to include in his specifications, such as thickness of material to be used for pulley stiles of windows and sash rails, thickness of material for panelled work, &c. All this appears in the specifications. When these have been completed and carefully checked and co-ordinated with the drawings to see that both are in agreement, a set is typewritten or printed for each set of blue-prints, and given to the contractors who have been invited to estimate.

Now, at this stage of the job appears the greatest single difference between English and American practice, and this difference is summed up in the two words "Quantity Surveyor." In America the quantity surveyor is an unfamiliar figure; in England he is part of the very fabric of the building trades. Not that he is altogether unknown in the States. Of late years certain firms of quantity surveyors in New York have been sending out circulars to architects showing them how much it is to the advantage of the architect, client, and contractor to employ their services. But so far the building trades have not awakened to the fact that the quantity surveyor is a great asset. They have not realised that his fee is well earned by the way in which he removes the element of uncertainty from the process of estimating, and the many burdens he takes from the already overweighted shoulders of the architect and the contractor. Nor have they realised that in the larger sense the quantity surveyor is an economic saving to the community. In America, if five contractors are estimating on one job, five sets of quantities have to be taken. In other words, five men have laboured to accomplish what one man could do. Of course, it is difficult to convince the American client that the quantity surveyor's fee should come out of his pocket, but his objections can be met quite easily by showing him how much closer tender a contractor will give him when he estimates from a set of quantities than when he has to "count" his own materials from the drawings. Unless the contractor has done a great deal of work for the particular architects from whose drawings he is estimating, so that he knows, more or less, their methods of practice, he is bound to "cover" himself. He will allow for one or two more members in a cornice than the ¼-in. scale drawing shows—the ¼-in. scale sheet of typical details does not include every cornice on the job by any means—because sad experience has taught him in the past that architects, when they come to detail a cornice, sometimes forget how they showed it originally and add a fillet here and a bed mould there. And he generally has to consent to these additions or else get the architect and the owner down on him. Too often in American offices the harassing question of extras becomes a very uncertain game of barter. "Here, Mr. Contractor," says the architect, "we let you out of that mirror door in the owner's bedroom. Suppose you give us an extra drain in the garage?" And this the builder, with a gloomy face, finally consents to do, protesting that he has already dropped money on the job, and will be lucky if he does not go bankrupt on it, &c. I have noticed that in England, as in America, the builders are always losing money on every job. They ride around in big cars, and live in fine houses, but they lose on every building they put up. I think they all must have inherited large fortunes, and are using them up to avoid the income-tax. So taking all these things into consideration, I feel sure that any fair-minded American will be quite ready to agree that English practice has scored one when the quantity surveyor is mentioned. Perhaps we shall have him more generally in the States before long. Let us hope so.

The other difference at this stage of the job lies in the matter of preparing the ¼-in. scale drawings, and I really think more time and thought is spent on these in an American office than in an English one. Accuracy is more sought after there, and things are not rushed so—this, at least, has been my experience. Assistants here have told me that in England both individual clients and building committees take a great deal of time to decide when or where they are going to build, or whether they are going to build at all; but when they do decide they expect to see the building up and ready for occupation in a little over a week. So they "dun" the poor architect and he naturally calls for his assistants. "Come on, Jones," he will say, "just lay a piece of linen over these sketches and trace them for the quantity surveyor's drawings. If there are any changes, we'll take care of them on the ¼-in." And the assistant, of course, does as he is told, with the result that before the job has progressed any distance unforeseen changes have rendered the ¼-in. scale drawings wrong, and perhaps useless. An attempt is made to bring the ½-in. details up to date, but it is rarely successful, and sometimes the building is complete without there having been a really correct set of drawings on the job. Certainly, it seems to me, it pays to make haste slowly when you are preparing the first drawings. You can hurry after you have laid a thorough foundation but only then.

Now, let us go back and take up the job where we left it in the American office. Let us suppose that four contractors have estimated from the set of blue-prints and specifications, and the contract has been awarded to the lowest bidder. The ¼-in. scale tracings are again turned over to the same draughtsman, and he begins to dimension them. He does this very thoroughly indeed, covering the sheets with figures and other detailed information. (To be assured of this you have only to examine the working drawings of American architects published in the professional periodicals.) He figures the position of every wall, partition, door, and window. Nothing is left for the builder to figure out for himself. At every opening he draws a circle with his spring-bow pen in which he inserts a number, so that when any opening is referred to in the door or window schedule (of which more anon) its number can be given and reference to it made easy. Also, it can be referred to much more readily when speaking of it to the contractor or mill man over the 'phone. After the draughtsman has dimensioned the drawings thoroughly and checked all his figures, he turns them over to the chief draughtsman, who, in his turn, checks every figure, marking each correct figure on the tracings with a little check mark in red ink. In this way the drawings are rendered as nearly correct as it is possible to make them. A print of each completed drawing is then handed to the contractor, who is instructed to stake out the building.

(To be concluded.)


A GROUP OF SIX COTTAGES FOR A WEST ASPECT
TYPES X(k) X(l) X(m)
Scale of Feet
FIRST FLOOR PLAN
TYPE X(m) CLASS B4
TYPE X(l) CLASS B3
TYPE X(k) CLASS B4
GROUND FLOOR PLAN
Louis de Soissons A.R.I.B.A. S.A.D.G.
Architect Welwyn Garden City
Sept 1920

From *The Garden Cities and Town-Planning Magazine.*

Cottages at Welwyn Garden City.

MR. LOUIS DE SOISSONS, A.R.I.B.A., S.A.D.G., Architect. (*See p.* 222.)

PROPOSED GIRLS' HIGH SCHOOL, BURTON-ON-TRENT.

WE have received the following criticisms from a school architect of considerable experience on the designs submitted in the recent competition for a High School for Girls at Burton-on-Trent :—

Over seventy sets of drawings were submitted in this competition, and to anyone keenly interested in school planning the result on the whole must be regarded as very disappointing. In no type of building has planning made greater strides within a short period than in the case of schools. During the years 1904-14 school planning was completely revolutionised, and although many plans have been published and papers written on school hygiene during that period they seem to be an unknown quantity, so far as many competitors are concerned.

Architects sometimes feel hurt when they think of their calling being regarded as the Cinderella of all the professions, but after the exhibition of these drawings one wonders whether it is not their own fault. How can they possibly expect to receive consideration at the hands of medical men and scientists if they will not take the trouble to master the salient features connected with hygiene, and plan their buildings accordingly ?

It is with real sadness that one comments on the plans submitted for this competition. In fact, one wonders what induced many of the competitors to waste their own time and the time of the assessor and critics by sending in plans, and this can be said without respect of persons.

To take the case of ventilation, only two competitors seem to have mastered what is really meant by cross ventilation. Neither of these was placed. Again, while one can understand the desire to make the cost of the building appear low, does it justify competitors cubing buildings out at a figure considerably less than would be the cost in actual work ?

The site is an admirable one for a school, standing on high ground in the best part of Burton, and giving an excellent opportunity for architects to show what could be done. One knows that the war has upset things and that the last six years have made a serious gap in many men's lives, but this does not excuse people from incorporating in plans those serious defects which it has been the aim of school specialists to eliminate since 1904.

The conditions of this competition did not call for building in cheap methods of construction. They appeared to have called for a building simple in treatment, which is quite another matter, and the question arises whether a secondary school of this size, providing accommodation for 460 girls, should be constructed on semi-permanent lines. This school is a public building to all intents and purposes. Should it be erected in light construction, and should trade improve immediately after the building were completed, it would be a perpetual source of regret and anxiety to all concerned that the building was not erected on recognised permanent lines.

Moreover, can it be shown that any forms of so-called semi-permanent construction are really cheaper than brickwork ? Public men in London and the Provinces have investigated this question very carefully and have come to the conclusion that, taking all things into consideration, there is no method of light construction which has been produced up to the present that can be recommended as being more economical or more satisfactory than brickwork in one or other of its various forms. A point that has to be borne in mind at the present time is settlement, due to the numerous factors operating above and below the earth's surface. All buildings settle more or less, and where metal lathing is used, as recommended by some, with no more than two inches of covering, the question arises whether wind and rain will not drive through the cracks arising from settlement, etc., and set up corrosion of the metal lathing, especially in an exposed site such as this.

To come to the design, No. 40, by Messrs. William and T. R. Milburn, of Sunderland, placed first by the assessor, this plan is pleasing in outline but it is not without defects. While it may be very convenient to have all classrooms on one floor, it certainly is most inconvenient to have all the water-closets, lavatories, and cloakrooms on the floor below. There is not a single emergency closet for 460 girls on the classroom floor ! It is a serious matter, too, to think that all the children must be constantly travelling up and down to reach their cloaks. The congestion on the two staircases on the senior side would probably prove very serious at times.

Another important defect is the fact that the whole of the cloakroom accommodation for the seniors is in one building, and all so arranged as to form alleys twenty feet or more in length with access and egress from one end only. As regards the closets on the senior side, one half at least are badly lighted and badly arranged for drainage inspection. The closets, moreover, are so arranged that one block is under a science room and the other under the library. So far as the problem of ventilation is concerned, although open corridors are provided, the reason for having open corridors seems to be lost sight of, for not one room has windows opening into the corridor to ensure cross ventilation. Small windows above a verandah are anything but satisfactory by themselves.

The report accompanying the plan states that the ventilation is to be by natural means assisted by a fan. The two things are so contradictory that one wonders how such a statement could have found a place in the report. Another drawback to the plan is the fact that the two science rooms are separated. There is sure to be apparatus common to both, and the preparation room should be common to both laboratories.

The elevations give the impression of being of a building of temporary character, and do not impress one as being consistent with the appearance which a public building should have. The whole of the ground floor is to be of a light construction, and the remarks made at the head of this article are borne out by the appearance of the design.

The design is illustrated by drawings which are neat in appearance, and this is more than can be said of some sent in. They were published in *The Builder* for February 4.

Design No. 22, by Messrs. Rees and Holt, of Liverpool, is placed second. This plan has many good points, and in some respects, in the opinion of the writer, is superior to the one placed first. The elevations are not up to the standard of the plan placed first ; in fact, one has to wonder whether the building is designed for this climate.

In the planning a mistake is made in placing the platform in the assembly hall at the wrong end. This should, of course, be as near to the Headmistress's room as possible, both for opening of school and speech days, &c. The water-closets show on the ground floor 18 w.c.'s in double file, half of which are badly lighted. The congestion in such a case would be a serious matter. It means that all the closets are in one corner of the building, and that the whole of the 340 seniors would be using these conveniences, a defect which is also apparent in the design placed first. The construction is of a light character.

As regards the prices, one wonders how, even for brick foundations, they could be cubed so low as 6d. for the general building and 5d. for the central hall.

Design No. 8, by Mr. Edward T. Allcock, of Loughborough, is placed third by the assessor. This is a quadrangular plan, but with courts so small as to give a very cramped appearance.

There are some strange things in this plan. For instance, the only entrance to the w.c.'s is through the lavatories. The only approach to the gymnasium from the outside appears to be through the changing-rooms, or by passing in front of the rooms of the Headmistress and staff. The changing rooms are large and not well lighted. The staff cloakroom and lavatory can only be approached through the staff-room. There is no proper cross ventilation, and the same mistake has been made here as in the other plans of putting the lavatories and w.c.'s in one corner. The elevations of this set are quite good, and the construction is of a permanent character.

Having said this much for the premiated designs, one wonders why the designs numbered 47, by Mr. H. H. Thomson, of Leicester, and numbered 5, by Mr. H. V. Hague, of Derby, do not find a place. The one by Mr. Thomson has a feature which no other plan has, inasmuch as one side of each classroom can be thrown completely open by means of glazed doors. The cloakrooms are well divided, although the junior cloakroom is some distance from the entrance. One drawback to the plan is that the connection on the west side is cut off by the hall, but a slight modification could have rectified this.

The science laboratories show the best arrangement of any set sent in. The quadrangles are of a good size, and give a pleasing impression. There are one or two defects in the plan, such as no w.c.'s on the first floor, the smallness of the heating chamber and, further, the gymnasium is placed over the assembly hall. It would appear, too, that the only connection between the house and the school is through the assembly hall. Apart from these defects the plan is a very pleasing and able one, and bears evidence of being prepared by an architect accustomed to school planning on modern lines. The design is good, and the price per cube foot reasonable. In fact, there are so many points in favour of this plan that one is, as stated, at a loss to understand why it did not receive a place.

In design No. 5, by Mr. Hague, the principles of modern school planning are understood and applied. The conveniences and cloakrooms are well arranged and divided up so as to avoid congestion. This plan is the only one of all those sent in that provides separate sanitary conveniences for the kindergarten boys. The plan also provides a sick room. There is a feature of the plan to be commended in that the gymnasium is a separate building with connecting corridor, and placed in such a position as not to clash with any of the other buildings. The design is simple and good, and would bear inspection when erected. There are two minor defects ni the plan, but on the whole it shows such a grasp of school requirements that here again one wonders why it did not receive a place.

Credit is due to the Governors of the Girls' High School for placing the drawings on exhibition in a large and well-lighted room, and thanks must also be extended for the courtesy shown in every possible way. It is to be hoped, however, that when the next competition for a secondary school takes place the general standard of the plans submitted will be higher.

The Artists' Benevolent Institution.

The annual meeting of the Artists' General Benevolent Institution was held at the Royal Academy on Thursday last week, under the presidency of Sir Arthur S. Cope. Mr. E. Guy Dawber (Hon. Treasurer), in presenting the balance-sheet, said the accounts of the institution showed that a sum of over £5,000 had been distributed in the form of relief grants, education grants, and annuities. They had inaugurated a scheme for educating children of living artists who, through causes beyond their control, due to the war, had not been able to educate their children as they wished. In that way the institution had spent £923, and they hoped to be able to continue the scheme. The present Council was re-elected with the additional names of Mr. Lewis Baumer, Mr. Jacomb-Hood, Mr. Graham Petrie, Mr. Claude Shepperson, and Mr. Fiddes Watt. The President and honorary officers were re-appointed, and thanked for their services.

HOUSING AND TOWN-PLANNING NOTES.

The Cost of House Building.

Owing to the cost of the houses in the accepted tender for its housing scheme, the Woodstock Town Council has decided to refer the Housing Committee's report back in order to delay the scheme.

The Clerk to the Teignmouth Urban District Council has reported that the annual charges on the houses proposed to be erected by the Council would be £100 each. A penny rate would amount to £36 per house for the ten houses in the scheme, and if a rent of £30 per annum were obtained there would be a deficiency of £34 per house to be made good by the Government.

The Skelton and Brotton Urban Council has decided to defer the signing of its housing contract, and to have a clause inserted in it to give the Council the benefit of any fall in prices.

The Penzance Town Council has decided to defer its housing scheme until the report of the Committee which is inquiring into the cost of building is published.

Land for Housing.

BROMLEY.—Mr. Howard Martin, Official Arbitrator under the Acquisition of Land (Assessment of Compensation) Act, 1919, has issued his award in a claim by Messrs. Fox Brothers, of Farnborough, against the Bromley Rural District Council, concerning the Council's compulsory acquisition for housing purposes of certain freehold land of an area of one acre or thereabouts, situated in the parish of Farnborough. The award is that the acquiring authority is to pay the claimant the sum of £736, the acquiring authority to pay the claimants' costs as from the date of the unconditional offer. Mr. J. Seagram Richardson (on behalf of the claimants), at the hearing of the case, submitted a total valuation of £1,080. Mr. A. B. Thornton, District Valuer of the Inland Revenue (on behalf of the Rural Council), valued the land at £560.

Cost of Building.

The National Federation of House Builders states that there is no reasonable ground for the recent rumours of a fall in the cost of house building. They say: "Dr. Addison has stated that contracts can be let at £100 per house less than was possible a few months ago, and this appears to have inspired many prophets to predict a rapid fall in the cost of houses. Unfortunately, the facts do not confirm these rumours, for prices are constantly increasing and it is more expensive to build to-day than it ever was. The increase since the end of March last year in the cost of the necessary materials for one house in Manchester, which is typical of the country, is £130. In London the increase during the last twelve months is 20 per cent. of the then cost, and consists of such items as cement, 73s. 6d. to 90s. 6d.; lime, 63s. to 80s.; bricks, 75s. to 97s. 6d.; facing bricks, 130s. to 165s.; tiling, 62s. 6d. to 97s. 6d. There has been a slight decline in the price of timber due to the reduced freight charges, but in almost every other item substantial increases have taken place. In view of these hard facts the repeated statements as to a reduction in the price of houses are misleading. The reduced tenders obtained by the Ministry of Health may be due to a variety of causes quite apart from the cost of building—the specification may be different, the administration may be improved, or the conditions may be varied. Wages have increased by 20 per cent. during the past year and as labour is the chief item in the production of houses, there cannot possibly be any reduction in the cost of building until very different conditions prevail."

WEEKLY HOUSING RETURN.

Progress of housing schemes up to February 4:—Schemes submitted, 11,545; approved, 8,968. Lay out schemes submitted, 7,212; approved, 6,651. House plans submitted, 292,122 houses; approved, 275,182. Tenders submitted, 188,240 houses; approved, 173,791. Contracts have been signed for 145,883 houses.

Schemes dealt with during the week ended February 4:—Schemes submitted, 22. Lay-outs submitted, 33; approved, 39. House-plans submitted, 1,067 houses; approved, 1,177. Tenders were submitted for 2,153 houses, and approved, 1,616. These schemes include the following:—

Applications.

SITES.

RURAL.—Eton, 17.43 acres.

LAY-OUTS.

URBAN.—Camberwell, March, Millom, Mottram-in-Longdendale.

RURAL.—Brailes, Bridport, Dartford, Dorchester, Gnosall, Henstead, Kettering, Luton, Martley, Newton Abbott, Poole, St. Faiths, St. Thomas, Tavistock, Tendring, Thingoe, Totnes, Uttoxeter, Wareham and Purbeck, Wem, Wetherby, Winslow.

HOUSE PLANS.

URBAN.—Aberavon, 98 houses; Brighouse, 11; Cheshunt, 20; Huddersfield, 130; Liverpool, 270; March, 100; Millom, 25; Mottram-in-Longdendale, 6; Poole, 16; Seaton, 12.

RURAL.—Brailes, 6 houses; Brixworth, 6; Cerne, 8; Chippenham, 36; Chorley, 6; Dorchester, 24; Gnosall, 4; Henstead, 6; Kettering, 96; Martley, 36; Poole, 4; St. Faith's, 6; Shaftesbury, 10; Tavistock, 20; Tendring, 6; Tewkesbury, 12; Thingoe, 12; Totnes, 4; Uttoxeter, 6; Wareham and Purbeck, 6; Wetherby, 16; Wokingham, 38.

Approvals.

LAY-OUTS.

URBAN.—Aberavon, Camberwell, Chingford, March, Paignton, Salcombe.

RURAL.—Axbridge, Brailes, Chorley, Gnosall, Helmsley, Henstead, Llangollen, Lleyn, Luton, Martley, Newtown and Llanidloes, Poole, Rotherham, St. Faith's, St. Thomas, Tendring, Thingoe, Totnes, Uttoxeter, Wareham and Purbeck, Wem, Wetherby.

HOUSE PLANS.

URBAN.—Aberavon, 98 houses; Ammanford, 10; Bishop's Stortford, 62; Brighouse, 11; Cardiff, 8; Chingford, 24; Criccieth, 24; Liverpool, 270; Llanelly, 19; Lyme Regis, 10; March, 100; Newbury, 22; Paignton, 8; Poole, 16.

RURAL.—Axbridge, 6 houses; Brailes, 6; Brixworth, 6; Cardigan, 12; Carmarthen, 14; Chippenham, 56; Chorley, 6; Faringdon, 10; Fylde, 2; Gloucester, 22; Gnosall, 4; Henley, 8; Henstead, 6; Kettering, 108; Llangollen, 10; Lleyn, 18; Martley, 36; Newtown and Llanidloes, 20; Poole, 4; Ruthin, 8; St. Faith's, 6; Shaftesbury, 10; Shardlow, 8; Tavistock, 8; Tendring, 6; Thingoe, 12; Totnes, 4; Uttoxeter, 6; Wareham and Purbeck, 14; Wetherby, 16; Wokingham, 38.

Tenders Approved.

URBAN.—Abingdon, 32 houses; Alvaston and Boulton, 12; Annfield Plain, 50; Bedlingtonshire, 62; Birmingham, 186; Bowden, 36; Bredbury and Romiley, 30; Bromborough, 16; Budleigh Salterton, 14; Cardiff, 8; Ellesmere Port and Whitby, 10; Godmanchester, 6; Holme Cultram, 34; Llanelly, 19; March, 100; Newbury, 10; Newton Abbot, 4; Northampton, 118; Slaithwaite, 8; Tamworth, 50; Taunton, 18; Wallsend, 22; Wandsworth, 206; Wellington, Som., 12; Whitehaven, 224; Wilmslow, 36.

RURAL.—Alnwick, 24 houses; Bath, 4; Brixworth, 6; Chesterton, 6; Clutton, 6; Droitwich, 12; Easington, 12; Fylde, 2; Honiton, 6; Lymington, 20; Malling, 2; Marshland, 6; Newmarket, 6; Penrith, 8; Sculcoates, 42; Shardlow, 8; Ulverston, 4; Welton, 8; Willinton, 16; Wokingham, 76.

COUNTY COUNCIL.—E. Sussex, 1 house.

THE EFFICIENCY EXHIBITION.

The Exhibition at Olympia, which was opened by Sir Robert Horne on February 10, constitutes an interesting precedent in the history of these institutions, insomuch that it is dedicated to an abstract quality—efficiency. Without entering into the philosophical discussion—efficient to what end, it may, with some truth, be said that the measure of inefficiency is the measure of wasted or misdirected energy. Put into a concrete term, it means that an engine that should develop 100 h.p., and which, though consuming sufficient fuel to achieve that output, yet only develops 75 h.p., is inefficient. And it is the need for eliminating this waste throughout our industry, and indeed all our activities, that has led to this exhibition, so that the business and professional man may have an opportunity of studying the very latest methods of organisation, in both small matters and large. Thus, in the smallest architect's office, just as in the largest contractor's yard, there probably exist certain imperfections of organisation, of systems of registering, of handling material, and the like. Such an exhibition appeals to a very wide circle of human industry. A few notes may serve to indicate some of the matters more pertinent to our readers.

At the present time the employment of every possible aid to increased production is of the utmost importance and therefore we most gladly welcome every effort that tends in this direction. A good example of work being done by educational institutions is that of the Loughborough College, which is carrying on the education of youths from 16 years of age, and also a number of ex-Service men being trained under the Ministry of Labour. Some 400 are educated in this way, theory and practical work being alternated, so that this must to a large extent fulfil the function of the old apprenticeship system, which is so much lacking to-day.

The supply of coal has been a source of much trouble and anxiety lately, and therefore the Coalite stand is one of much significance if we once get its manufacture established on a firm business basis. It is claimed that the production of Coalite on a large scale would tend to conserve our coal supply and to provide coal at a greatly lessened cost. The Coalite is to be seen burning in the admirable Nautilus grate and the Eagle range. Amongst the various schools, the Polytechnic, the L.C.C. School of Arts and Crafts, and the British School of Building have good and interesting displays. The Ministry of Health shows the work of ex-Service men, notably brickwork by the Cricklewood Training Centre for ex-Soldiers, upholstery and chair-making exhibits, and some very promising wood carving by ex-Soldiers after only eight and a half months of training. Straw and wicker basket making is also included in this work. In connection with this collection is a good exhibit of stoneware, and machinery for making it by Messrs. Doulton. Lord Roberts' Workshop stand includes neat pieces of painted wood furniture, quite nice lacquered mirror boxes, &c., and little inexpensive work-tables. The scullery and kitchen furniture ought also to find a useful market.

A scale model 35 feet long illustrates the Manchester Ship Canal, and with the hanging map makes one of the best exhibits of the kind we have ever seen. A fine stand illustrates the work of the British Thomson-Houston Co. in electrical work. Probably one of the most interesting exhibits is the dainty stand of Messrs. Chance, Bros. & Co., showing glass in a great number of forms, including various qualities in texture and colour which will interest architects. There is a good exhibit of heat-resisting glass globes and many valuable illustrations of a scientific kind; from this point of view the stand is especially interesting.

The Economic Building Corporation, Ltd., show samples of their well-known concrete blocks and illustrations of buildings at Welwyn.

An excellent exhibit of drawings and designs is made by the Designs and Industries Association. We were glad to note good exhibits by the inmates of St. Dunstan's.

THE BUILDING TRADE.

EXCAVATIONS FOR MESSRS. PETER ROBINSON'S NEW PREMISES.

DURING the past few months considerable controversy has raged around the subject of higher buildings for London, the pros and cons of which it is not necessary to consider now; but the need for utilising available space to the utmost is shown by the tendency in new office and commercial buildings to penetrate ever deeper into the ground. In fact, it may be that the time is not far distant when the amount of a building above ground will be equalled by a similar mass below. An interesting example of this burrowing tendency is to be seen at the present time at Oxford-circus, where, at the junction of Upper Regent-street and Oxford-street, Messrs. Peter Robinson are re-building their premises. The site measures approximately 200 feet by 90 feet, and it is the restricted area that is responsible for some of the difficulties which it has been necessary to negotiate, and for the course of procedure adopted. The new depth along Oxford-street will be 38 feet, and along Upper Regent-street it will reach the high figure of 56 feet from pavement level to the underside of the concrete. This space will be occupied with three floors, which will be utilised for show-rooms, staff, boilers, plant, etc.

The method of procedure has been to construct all around the site a reinforced concrete retaining-wall without lateral buttressing. This retaining wall thus forms the sides of a huge reinforced concrete tank, within which the building will, in due course, be erected. So separate will this wall be from the main building that it does not depend for its stability either upon the thrust of the cross walls or of the floors; indeed, owing to the restricted area of the site, the whole of the retaining wall will be completed prior to the commencement of the main excavation, which will meanwhile only be carried to a depth of about 10 feet. The preliminary design for this wall showed what was to all intents a lateral girder completely encircling it in the form of a web of concrete reinforced by steel work of the usual kind. This girder, which formed part of the wall itself, was intended to occupy a position half-way up the total height, and it was to have been 8 feet wide. Since it was not possible for this to protrude into the building, it was designed to extend for the whole length of the wall under the street some 28 feet below the pavement. Such an arrangement would have simplified the construction of the heel of the wall, but after due consideration it was decided to abandon this design in favour of the one now adopted.

The thickness of the retaining wall, which is battered and has offsets at the various floor levels, varies from 2 feet at the top to 6 feet 3 inches at the base, where it spreads to a heel 29 feet 6 inches in width and 6 feet in thickness. Of this heel 3 feet is outwards into the road and the remainder inwards under the building. It is the weight of the earth on this 3 feet that counter-balances the tendency of the wall to rise up and turn under the huge lateral pressure of the earth which it supports. The consulting engineers for this retaining wall are Messrs. Wells & Cocking, of 10, New-square, Lincoln's Inn, W.C.

Another particularly interesting feature on the job is the method of shoring adopted for the adjoining party walls. Owing to the great depth to which the excavations are to be taken, it was not possible to shore with the ordinary raking shore, and the adjoining buildings are supported by means of vertical riveted steel-plate girders which run down into the retaining walls; they thus form giant vertical cantilevers.

The first task actually undertaken was the excavation for the enormous retaining wall, and this consists of a trench 18 feet wide around the entire site. In the course of this excavation, loose ballast and rubbish was encountered to a depth of 56 feet, the remaining 20 feet being pure London clay. The sides of the trench are supported by heavy timber shoring of the usual kind, composed of balk timbers 12 in. by 12 in. and 12 in. by 9 in., close boarded. Over this trench is carried not only the footpath to the road but also a row of show cases, behind which runs a covered gangway giving access for the staff to what is actually a continuous temporary shop front. The question of employing mechanical shovels and grabs was very thoroughly considered by the engineers and contractors, and after much deliberation it was decided that it would not be practicable to use such devices owing to the inaccessible nature of the excavations, especially in connection with the undercutting of the heel and toe of the retaining wall. The work is therefore being done by hand digging. An elaborate system of light railways has been installed. The earth is loaded by cranes into the trollies which are run to the filling point, where it is removed by another crane and placed in the carts.

Water is often a source of difficulty in jobs of this description, and this site proved no exception. To combat the trouble two steam pumps are in use, and owing to the treacherous nature of the soil at water level the poling boards have been grouted by means of a specially designed compressed-air plant.

In excavations of such a depth the chances that something of interest may be encountered are considerable, and such unexpected discoveries are often the means of advancing or completing some historical or scientific theory. The most interesting discovery in the course of this work was a cast-iron tunnel, which, it was found, had been used in connection with the construction of the escalator for the Oxford-circus Station on the Bakerloo Underground Railway. It appears that ground access could not be obtained on the south side of Oxford-street near the station, and it became necessary, therefore, to construct a tunnel under the road from a point on the north side. After the completion of the work there was no further use for this tunnel, yet the sections were never withdrawn, and might, indeed, never have been discovered but for this occasion. Those sections which would have interfered with the excavations for the building have now been removed.

The new building will consist of four floors above the ground floor, making in all, with the basements, a total of seven. Although the retaining wall is constructed in reinforced concrete, the building will be in steel work. The aim of the contractors is to give Messrs. Peter Robinson possession of the entire ground floor and basements at an early date, so that they may be in occupation while the upper part of the building is under construction.

The architects for the work are Messrs. T. P. & E. S. Clarkson & H. Austen Hall. The contractors, both for the excavations and superstructure, are Messrs. Higgs & Hill, Ltd., of Crown Works, Lambeth.

ECONOMIC PRINCIPLES.

LORD INCHCAPE, at the meeting of shareholders of the National Provincial and Union Bank of England, made some very pertinent observations on the industrial position. He emphasised the points that all labour, mental or physical, in the long run can only receive what it is competitively worth, that maximum wages with minimum production is fatal, that a standardisation of wages saps incentive, and that industrial peace is a necessity. He also said he saw signs of a sounder view coming into force as between employers and employed on these subjects.

His Lordship only referred to maximum wages, but statutory minimum wages are equally heterodox and appear entirely impracticable in a time of unemployment. In agriculture, for instance, there is work to be done and men willing to do it, but the minimum wage makes it impossible for farmers to employ casual labour. Relief works are started subject to a minimum wage, with the result that men in employ but at less wages leave their employ and apply to be taken on at relief works. Unemployment will not be relieved so long as economic principles are interfered with by statute.

Then, on the point of industrial peace, how can this be hoped for so long as strikes are threatened and strikes are put in force in connection with matters wholly outside the industries with which the disputants are connected? The right to strike is sacrosanct as between employer and employed, but a "saner and more healthy spirit" will be discernible when the rank and file of the trade unions begin to appreciate that a strike on questions outside the terms of their employment is a gamble with their daily bread, and a gamble with all the odds against them. Lord Inchcape pointed out that a perpetuation of the unrest and ill-will which brought about the disaster of the coal strike can only mean that in a very few years this country will lose her commercial and financial supremacy. This is undoubtedly the fact, and we believe that many trade unionists clearly recognise it. We are always told that it is the "hot-heads" who rule the unions, but it behoves trade unionists to see that this shall no longer be the case. We live in times when trade union policy must be reformed from within these bodies and not from outside, and trade union members can do themselves and the nation a great service by exerting themselves in their own affairs and infusing a more restricted and peaceful spirit into the policy of the unions.

THE INDUSTRIAL COUNCIL FOR THE BUILDING INDUSTRY.

A QUARTERLY meeting of the Industrial Council for the Building Industry was held at Montagu House, Whitehall, on Thur-day and Friday last week. The Chair was occupied by Mr. J. STORRS (Chairman)

In opening the proceedings, the CHAIRMAN said for the first time representatives of three of the professional institutions, viz., the Royal Institute of British Architects, the Society of Architects, and the Quantity Surveyors' Association, were present at a meeting of the Council. They were all pleased to welcome those representatives, and they trusted the professional element would assist the deliberations of the Council and help to get that body on a better footing with the Government than it appeared to be at present.

In reply, SIR CHARLES RUTHEN (President of the Society of Architects) thanked the Chairman for his welcome, and said, so far as they were able, the representatives of the professional institutions would give their best assistance in helping forward the objects of the Council.

Resettlement Committee.

MR. R. WILSON (Operatives) presented the report of the Resettlement Committee, which stated that the Adult Apprenticeship Scheme put forward by the Committee in October last was immediately prejudiced by the action of the Cabinet in putting forward proposals for the dilution of the industry by ex-Service men under special conditions and in addition to the number already to be provided for by adult apprenticeship. These negotiations were not conducted with the Resettlement Committee, and the results would lead to an anomalous position on such schemes where they might be carried out. Under the Adult Apprenticeship Scheme provision was made for the payment of scales of wages which would compare unfavourably with those offered to Government dilutees for whom an exceedingly short period of training was contemplated. Further, the Committee understood when the Adult Apprenticeship Scheme was accepted by the Ministry of Health that, although the Government did not consider it would adequately meet the situation, nevertheless, they were prepared to give it a trial. The Committee now found itself in an invidious position. Its advice regarding the augmentation of building trade labour was not being accepted; the scheme for Adult Apprenticeship had been rejected by an overwhelming majority of the members of the unions, and there seemed every probability that the scheme for the dilution of the industry by 50,000 ex-Service men would also not be accepted. The Committee suggested that the Industrial Council should take into consideration the present position and determine what further steps should be taken in the interests of the industry, especially in view of the present position revealed by the statistics published by the Registrar General and of the separate negotiations, which had led, in their opinion, to the present difficult situation. The Committee, he said, felt it was not properly supported by either side on the Council, and its advice was not followed by the Government. He was of the opinion that had the advice of the Committee been followed much of the confusion which existed with regard to housing and building matters generally would not have existed. It seemed that some such Committee should be in existence, because at any moment the Government might want advice as to the building trade, and there should be a body which they could call into consultation. Matters affecting the industry would be more efficiently dealt with if they were dealt with by the whole industry as represented by a Committee of the Industrial Council rather than by sections of the industry.

MR. T. GRAHAM (Employers) said he thought there was a real need for such a Committee, perhaps not so much for what it might be able to do as for what it might be able to prevent.

MR. T. FOSTER (Employers) said the Government had consistently ignored the advice of the Committee in regard to the augmentation of labour. It was felt that the Adult Apprenticeship Scheme was the only possible solution, but unfortunately the Government came forward with its scheme for pitching into the industry 50,000 more men. That had the effect of nullifying the Resettlement Committee's scheme, which, in all probability, would have been agreed upon by both employers and operatives. The Government had, from time to time, gone over the heads of the accredited representatives of the industry and had tried to get the operatives to accept a scheme apart from the proposals put forward with the sanction of the Council.

MR. H. MCPHERSON (Operatives) said in discussions relating to the whole industry neither the employers nor the operatives should deal with the Government behind the back of the Council; all such matters should be dealt with through the Council. He had heard that the Government proposed to call in the employers to consider the question of labour in the building trade, and if that was so the employers should refer the Government to the Council.

Mr. T. BARRON (Operatives) said one of the reasons which prevented many of the operatives from favourably considering the "Thompson" apprenticeship scheme was the fact that before the Committee had time to put the scheme before the members of the trade unions the Government launched another scheme for the absorption of 50,000 men.

Mr. W. MOFFAT (Employers) said practically everything the Committee had done had been declined by the Government, although approved by the Council.

The report was accepted.

Management and Costs Committee.

MR. T. FOSTER (Chairman of the Management and Costs Committee), in reporting the work of that Committee, said since the meeting of the Council in November last the Committee had held three meetings, and hoped to present a final report in May. The Committee had decided not to proceed with the report already submitted but to endeavour to deal with the various separate matters and report upon:—

(1) A scheme of unemployment pay.
(2) A system of accountancy and costing.
(3) A system of superannuation.
(4) The question of the regularisation of demand for labour.

The first of those matters had formed the main work of the Committee, and the following resolutions had been passed, and might be taken as the basis upon which the final report would principally be built up:—

(1) The Committee will first consider the provision of a supplementary scheme under the Unemployment Act, 1920, to cover unemployment as therein defined, which, it is understood, includes intermittent unemployment through stress of weather, sickness, or accident.

(2) It is suggested that the Committee should base its proposals upon the provision of a benefit of 30s. per week per man as unemployment pay in addition to the 15s. State benefit; this sum to be formed by means of a supplementary scheme under the Unemployment Insurance Act, 1920.

(3) That for this purpose a contributory scheme should be drawn up, the funds to be found by joint contributions from employers and operatives.

(4) That contributions to the funds shall be in equal moieties.

(5) That the scheme should be established subject to a review at the end of three years and subsequently at the end of each triennial period; the review to take into consideration the amount of cost of the benefit in relation to the circumstances then prevailing.

(6) That the formation of a scheme to provide benefit for part of a day lost through inclement weather be the subject of statistical enquiry.

At present the Committee was not in a position, owing to the absence of reliable data, to make definite recommendations pending such an investigation. At the outset the Committee was faced with the necessity for formulating a definite proposal in order that the Employment Department of the Ministry of Labour should be enabled to make the necessary calculations regarding the cost of the scheme, but the Committee was not yet committed to any definite report or point of view. To obtain definite information regarding the amount of "wet time" lost, it had been found necessary to draft a form for the use of such employers as might be prepared to help in obtaining reliable data. The following information had been given to the Committee by the Ministry of Labour:—

(1) That the cost of providing for a benefit of 30s. per week in addition to the State benefit of 15s. would be 1s. per week for both employer and operative.

(2) That the probable cost of abolishing the first three waiting days under the Act would be to increase the contribution by about 20 per cent., so that the total contribution to cover unemployment pay, together with the payment for complete days of "wet time" (which might be included in the three waiting days) and for State benefit would be approximately 1s. 7d. for both employers and operatives.

The proposals for the regularisation of the demand for building trade labour would be reported at a later date, as also would some proposals for the decasualisation of labour. That was an important matter, and the presence of the architects' representatives on the Council would be valuable in giving advice.

MR. A. J. FORSDIKE (Employers) said he was glad an endeavour was being made to obtain information in regard to lost time. It would be interesting to know the exact amount of time lost through stress of weather; he thought it had been over-estimated very considerably. It would also be useful to obtain some information as to the amount of time lost through absenteeism. He had been startled during the past year to find the enormous amount of absenteeism prevalent amongst the workmen in the building industry.

The report was received.

Education Committee.

MR. D. T. JOHN presented the report of the Education Committee.

MR. S. SMETHURST (Employers) said he thought the education scheme was the biggest thing carried through by the Council. If it could be brought about that the youths entering the industry could be trained in the spirit of the Education Committee's report, something of real value to everyone concerned would be achieved. But there would have to be close co-operation between employers and operatives. He hoped the National Federation of Building Trades' Employers would show its interest in the scheme by asking its constituent bodies in the areas where meetings in connection with the scheme were to be held to be represented, and the operatives' organisations should also be represented. He moved that 10,000 copies of the scheme be printed and circulated amongst those interested.

MR. S. STRANKS (Operatives) and MR. G. HICKS (Operatives) urged the desirability of extending the apprenticeship system, the latter stating that in many cases there was considerable difficulty in inducing building trade employers to take on apprentices.

MR. R. COPPOCK (Operatives) said if apprentices were to attend schools it would have to be done in the employers' time, as after a day's work they would be too tired to study.

MR. D. ANDERSON (Employers) said the ultimate salvation of the building trade lay in the better training of the operatives, making them not only better workmen but also better citizens.

The report was accepted, and authority given for the printing and circulating of 10,000 copies of the education scheme, or such larger number as might be required.

[An outline of the education scheme, together with speeches on the subject by the Rt. Hon. H. A. L. Fisher (Minister of Education) and members of the Industrial Council, are given on p. 234.]

Welfare Committee.

MR. J. P. COX (Employers) presented the report of the Welfare Committee. At the last meeting of the Council, he said, the Committee was asked to consider the question of extending the operation of the Workmen's Compensation (Silicosis) Act, 1918, to include stonemasons. It was, however, very difficult to obtain evidence and a meeting to consider evidence could not be arranged until February 17, and he hoped to present a full report on the matter in May. With regard to the Regulations regarding the safeguarding of machinery, a letter had been received from Sir Edward Troup (Home Office), expressing his gratification that they had been adopted by the Council, and stating that he was prepared to take steps to put them into operation. Sir Edward stated, however, that, in the present financial situation, it would be impossible to make the necessary increase in the staff of the Factory Department to deal with the matter, and he asked that the Council should appoint a small committee to meet the Chief Inspector of Factories to discuss it. The speaker moved that such a deputation be appointed.

On the motion of MR. R. WILSON (Operatives), the Welfare Committee was appointed to meet the Chief Inspector of Factories.

The Cost of Building Committee (Scotland).

MR. BRUCE (Employers) moved that an additional member from the Resettlement Committee be appointed to act on the Cost of Building Committee (Scotland). There were, he said, only two representatives of the industry on that Committee, one representing the employers and one representing the operatives, whereas there were two employers and two operatives on the English Cost of Building Committee.

MR. F. A. WALL (Acting Secretary) suggested that the Scottish Board of Health be requested to appoint two additional representatives, one from the Scottish Employers' Federation and one from the Scottish Operatives' Federation, and this course was agreed to.

The Builders' Foremen and Clerks of Works' Association.

THE ACTING SECRETARY read a letter from the Builders' Foremen and Clerks of Works' Association, asking if it were possible for that body to be represented on the Council.

On the motion of MR. T. BARRON (Operatives), seconded by MR. J. M. MACFARLANE (Employers), the request was not granted, on the grounds that the members of the Association were already represented through the trade unions to which they belonged.

The Scottish National Building Trades' Federation.

THE ACTING SECRETARY read a letter from the Scottish National Building Trades' Federation stating that that body had decided to sever its connection with the Industrial Council.

MR. MACDONALD (of the Scottish Federation) said it was very expensive to send representatives to the meetings of the Council in London, and although all the ten members did not attend, the cost was £400 per annum. They were told that the setting up of the Council was a big step forward, but at the end of the first year of its existence nothing had been achieved. The first result was something like a bombshell, in the shape of the Demobilised Apprentices Scheme, which set up discord between one trade and another, and between employers and operatives. Strikes and severe dislocation resulted, and the effects still obtained. Also, a scheme of scaffolding regulations was being considered which it was proposed to make applicable to Scotland as well as England, notwithstanding the completely different system of scaffolding in vogue in Scotland. In the opinion of many Scottish employers, more lives would be lost in erecting such elaborate scaffolding than would be saved by its use. The last straw was the Management and Costs Committee's report. There was also the fact that the Government paid very little attention to the recommendations of the Council, which had been ignored and flouted. After full consideration, the Scottish Employers' Federation regretted it could not see its way to continue to spend money and time in attending the meetings of the Council.

THE CHAIRMAN and others urged that the Scottish Federation should reconsider its decision, and MR. T. BARRON (Operatives) moved that the letter from the Federation be received, and that the Federation be asked to receive a deputation from the Council with a view to getting them to reconsider the decision.

MR. MACDONALD said the item of expense was not the main objection, although that was a considerable factor. The Federation would be pleased to receive a deputation on the matter, and he expressed the opinion that the line which most probably would be acceptable to the Federation would be the setting up of a Regional Council in Scotland.

The resolution was agreed to, and Mr. Macfarlane and Mr. D. Anderson were appointed as a deputation to meet the Scottish Federation.

Regional Councils.

MR. FOSTER (Employers) moved that in view of the proposed resignation of the Scottish Federation and the completion of the negotiations for the admission of the professional bodies, the Administrative Committee be requested further to consider the formation of Regional Councils, and report at the next meeting of the Council.

This was seconded by MR. MACDONALD (Employers), and agreed to.

Representatives of Professional Bodies.

THE CHAIRMAN said in his opinion the representatives on the Council of the professional bodies should be nominated to serve on the committees, where their advice would be very valuable.

MR. A. W. S. CROSS (Royal Institute of British Architects) said, on behalf of the Royal Institute, he thanked the Council for inviting him and his colleagues to sit on the Council. The closer co-operation between architects, builders, and operatives which would result would be for the welfare of the industry.

It was decided to invite the representatives of the professional bodies to serve on the various committees of the Council.

The Secretary to the Council.

THE CHAIRMAN announced that the resignation of the Employers' Secretary to the Council (Mr. A. G. White) would take place at the next annual meeting, and asked the Council to consider what steps should be taken in that matter.

MR. T. FOSTER (Employers) moved that instead of two secretaries being appointed (one to represent the employers and one to represent the operatives) one secretary should be appointed to represent both sides.

It was agreed to request the Administrative Committee to discuss the question of the appointment of one secretary.

The Next Meeting.

It was decided to hold the next quarterly meeting in Edinburgh, on May 26 and 27.

Industrial Research.

The Research Association for the Cast Iron and Allied Industries has been approved by the Department of Scientific and Industrial Research as complying with the conditions laid down in the Government scheme for the encouragement of industrial research. As the Association is to be registered as a non-profitsharing company, the promoters have applied to the Board of Trade for the issue of a licence under Section 20 of the Companies (Consolidation) Act of 1908. The Secretary of the Committee engaged in the establishment of this Association is Mr. Thomas Vickers, 174, Corporation-street, Birmingham.

CONVERSION OF HOUSES INTO FLATS.

IN our issue for May 28, 1919, we commented with some disapproval on the decision of a Divisional Court in the case Johnston *v.* Macanochie and Others. The case related to a house at Porchester Gate, Paddington, which had been sold to Mr. Johnston, but subject to restrictive covenants binding on the owner of that house and the owners of other neighbouring houses that the house should not be used otherwise than as a private dwelling-house. Mr. Johnston desired to convert this house into four self-contained flats or maisonettes, but being in doubt as to the effect of this covenant he applied to the court under section 27 of the Housing, Town-Planning, etc., Act, 1919, to vary the terms of the lease imposing the prohibition or restriction so as to enable the house to be converted "into two or more tenements."

This house had been purchased for £5,000 by Mr. Johnston, and he desired to convert it into four flats (one of which he intended to occupy himself) letting the other three for £350, or £400 in all. The County Court judge had held that under the Housing, Town-Planning, etc., Act he had no jurisdiction to make an order in such a case, as the Act only applied where a house was to be converted into tenements for occupation by the working classes, but the Divisional Court held that the section was general in its application and the case must be remitted for consideration. This was an appeal to the Court of Appeal from this decision, and that court has now affirmed the judgment of the Divisional Court (1921, 1 K.B. 239).

The objection we ventured to raise to the decision of the Divisional Court was that it was extending the operation of an Act only intended to apply to the housing of the working classes, as the part of the Act containing section 27 is so headed, and we might also refer to the use of the word "tenement" in this connection. The Court of Appeal has, however, unhesitatingly confirmed that decision, and it must be accepted as law. The court held that the word "house" was unqualified in section 27, whereas in other sections in this part of the Act it was qualified by such expressions as "suitable for occupation by the working classes," and therefore the section was of general application. The court also held that the wide power conferred indirectly benefits the working classes although applied to houses occupied by other classes, for by providing accommodation for the latter it indirectly affords housing for the former. We must respectfully submit that the reasoning seems to extend the Act unduly, and such indirect results can hardly have been present to the mind of the legislature when legislating on a particular subject with reference to a particular class. General expressions in an Act of Parliament, we imagine, have usually been considered in connection with the subject matter of the legislation. No stress seems to have been laid upon the word "tenement" in this connection in addition to the title and heading of the Act.

The decision will have serious effects on estates which have been laid out subject to restrictive covenants for residential purposes, as these restrictions may at any time be relaxed by order of a court. In the case under consideration there is little hardship, as the flats were of a high-class and not calculated to injure the neighbourhood, and objection had only been raised by one freeholder. It may even be doubted if the conversion of the house for this purpose would have infringed the covenants, but the case raises a question of principle, as in all cases the conversion may not be of the same character, and purchasers of property who have relied upon absolute covenants as preserving the character of the neighbourhood may in future have only to rely upon the discretion of the court before which they may be taken.

EDUCATION OF APPRENTICES IN THE BUILDING INDUSTRY.

ON Friday last the RIGHT HON. H. A. L. FISHER, M.P. (Minister of Education) attended the meeting of the Industrial Council for the Building Industry (reported on p. 232) in connection with the scheme for the training of apprentices in the building industry prepared by the Education Committee and approved by the Council.

The scheme provides for the establishment of a Committee in each centre of the building industry to be called the "Local Building Trades' Apprenticeship Committee," composed of representatives appointed half by the employers' associations and half by the operatives' associations. The functions of these committees would be: (1) to arrange for addresses and distribute literature with a view to stimulating the interest of the boys in craftsmanship; (2) to interview (with their parents) the boys who desire to enter the industry, and advise as to the applicant's suitability for the work he proposes to take up; (3) to recommend suitable boys to employers who have vacancies; (4) to prepare lists of employers who have the necessary facilities for training; (5) to ensure that the boys are receiving the right kind of training, both in the workshops and the technical institutions; (6) to consult with the local education authorities in regard to the equipment, selection of instructors, curriculum, &c., in the technical institutions, with particular reference to the courses to be provided in the continuation schools to be established under the Education Act of 1918; (7) to provide, under exceptional circumstances, for the transfer of an apprentice from one employer to another to enable him to receive special training; (8) to encourage advanced training in suitable cases where capacity is shown for posts of responsibility in the industry; (9) to promote the physical, social, and moral well-being of the boys by working in conjunction with juvenile organisation committees, boys' clubs, &c.; and (10) to consider and provide for those boys in the industry who cannot become craftsmen, but for whom continuity of employment in another capacity may become available.

It is provided that boys desiring to enter the trade must register with the local Advisory Committee for Juvenile Employment at the Employment Exchange, which would arrange for them to be interviewed by the Local Building Trades' Apprenticeship Committee, and employers desiring boys would obtain them through the Committee. The Committee would decide whether the boys were suitable for a trade within the building industry, and whether the employer was suitable or not.

The boys would be admitted between the ages of 14 and 17. The first three months of the apprenticeship would be a probationary period, and if that term was spent satisfactorily the apprentice would be indentured for a period of, normally, not less than four years. The indenture would be entered into between the employer, the apprentice, his parent or guardian, and the chairman for the time being of the Local Apprenticeship Committee. Full-time courses satisfactorily spent at a day technical school would count as part of the apprenticeship; if the course were for two years, those two years would count as the first two years of the apprenticeship, and the apprentice would start at the third-year rate of wages. Wherever practicable, boys undergoing approved institutional training would be indentured to the Local Apprenticeship Committee during such period of training, at the termination of which the Committee would arrange for the transfer of the indenture to a suitable employer.

The training would be a combination of instruction in workshops and on jobs and in continuation schools. In the former case the employer would be responsible for the training. All boys indentured under the scheme would attend a day technical school for not less than one whole day per week without reduction of wages, and also attend evening classes not less than two evenings per week during the school session. From 16 to the end of the apprenticeship the apprentice would attend evening classes during the session.

Provision would be made to enable those entering the trade as unskilled workers at a later period to receive such training as would enable them to perform efficiently the work on which they were employed, efforts would be made to induce them to attend evening classes, and frequent changes of occupation would be discouraged.

The following is suggested as a minimum scale for determining the wages of apprentices:—14 to 15 years of age, 17 per cent. of the journeyman's rate; 15 to 16 years, 20 per cent.; 16 to 17 years, 25 per cent.; 17 to 18 years, 32 per cent.; 18 to 19 years, 40 per cent.; 19 to 20 years, 50 per cent.; 20 to 21 years, 65 per cent.

MR. FISHER said he believed the scheme was the first comprehensive attempt to present a plan for the education of apprentices in a great industry in this country which proceeded from those engaged in the industry, and as such he regarded it as a landmark in educational history. For some time past he had been exercised in his mind as to the future of technical education in this country. The present system of education was organised on a local basis, and while that system worked very well for general education it worked less well for technical education. Technical education had to be considered not from the point of view of various industries or localities but from the point of view of the needs of a particular industry all over the country, so that a conclusion might be arrived at as to where the money might best be spent in the interests of an industry as a whole. For that reason he thought it very desirable that the great industries of this country should set to work seriously, as the building industry had done, to explore the needs of their own particular trades in regard to education. He considered the report of the Education Committee of the Industrial Council a most excellent document, on which he heartily congratulated them. He was glad to see they recognised the value of the Junior Technical Schools, and that they recommended that two years' training at those centres should count as two years of apprenticeship. The value of those schools would be greatly increased if the industries of the country took an interest in them. If those schools were to be a success it was necessary that the industries should employ the boys that went through them, and those boys must have some advantage for their education. It was also important that the employers should keep in touch with the education given, because if it did not the education would fall behind the needs of the trades. He had heard complaints from some trades that the teaching did not keep up to date, and that obsolete methods were being taught. A little kindly encouragement and counsel from members of the trades concerned would help the teachers to keep up to date, and would impart to the schools a utility which they otherwise would not possess. He was pleased to note that the Committee realised the necessity of educational employment for the apprentices in their leisure hours. With the reduction in the working hours that was becoming more and more important, and the Committee's proposals appeared to be excellent. He was also glad to see that the chairman for the time being of the Local Committee was to be a third party to the indenture, and that the apprentice was not to be left to the tender mercies of his employer. It often happened that the educational facilities were not taken advantage of by the boys for whose benefit they were provided, and that could only be remedied by the efforts of the trade itself. If boys in the trade knew they would get an advantage from attending the day schools or night schools they would attend them. But the saying that "Man is as idle as he dares to be" was equally applicable to boys, and unless the employers provided the apprentices with a powerful incentive to better themselves by a course of technical education they would not avail themselves of the opportunities offered. The provisions for the supervision of the training both under the employer and in the school were an excellent feature of the Committee's scheme. He thought the building industry very wise in taking precautions to provide for the young entrants into the industry. They were living in an age of very keen competition, and methods in the most conservative industries changed rapidly, or should change rapidly. If they were to keep up to date they must keep their eyes open and their ears to the ground. Just as a good system of education was one of the most powerful auxiliaries to national prosperity so an obsolete system of education was a detriment rather than a help.

A vote of thanks to the speaker was proposed by MR. J. STORRS and seconded by MR. I. OTLEY, who said the operatives were greatly pleased with the scheme.

MR. J. H. CANTRILL (Chairman of the EDUCATION COMMITTEE), in supporting the vote, asked whether the Board of Education could assist the Industrial Council by advising education authorities to make provisions for working the scheme, and to accept certain conditions which the Committee believed to be essential. The Local Committees of building trades' employers and operatives desired to have the power conferred upon them to consult with the local education authorities in regard to the equipment of the schools, the selection of instructors, and the details of curriculum in the building trade courses. A certain amount of opposition had been met with in that connection, but it was of great importance that the building industry should have a voice in settling such details. In conjunction with the various crafts, the Committee was compiling a syllabus of instruction for each individual class, their contention being that those practising the crafts were most capable of estimating the true relative importance of each item of instruction and the methods to be adopted in teaching. The Committee had been disappointed with the form and type of questions which had been presented to students in examinations in various schools. There was a great need for closer co-operation between those who worked at the crafts and those who taught and examined in those crafts. The Committee desired to see building trade schools established in various populous centres where boys would be admitted between the ages of 14 and 15 years, and where the general subjects taught would have a leaning towards the industry the boys would ultimately follow. For instance, mathematics might be taught in terms of quantities applicable to building; history might have relation to architecture; geography might be linked up with materials used in building; science might have a leaning towards the phenomena which influenced building; and in art the students might be educated chiefly with a view to giving expression to form in line. That was the ideal of the Committee, and it depended upon the continued interest of the Industrial Council and the realisation by the Board of Education that it was the best system to be adopted whether it would be a success or not.

In a brief reply, MR. FISHER said it was one of the provisions of the Education Act of 1918 that local education authorities should consult the industries concerned in arranging courses in continuation schools, and they would be failing in their duty if they did not do so. It was extremely desirable to bring the world of business and the world of education into close touch, and he considered the scheme of the building industry to be a big step in that direction.

Bristol University.

Messrs. George & Henry Wills, who gave large sums of money towards founding the University of Bristol, have contributed a further sum of £200,000 for the completion of the extensions now being carried out.

INDUSTRIAL STATISTICS, 1920.

WE have for several years past given a brief glance at the industrial statistics for the past year as published in the *Labour Gazette*, for they are not merely of historic interest but enable certain deductions to be drawn as to the future, and may also be instructive as indicating tendencies which should either be encouraged or avoided. The cost of living has so much to do with other industrial conditions that we may glance at those figures first.

We start with 1914 as the basic year, and when the Armistice was signed we find the average cost of food was 133 per cent. above that level; 136 per cent. by January, 1920; and in January, 1921, 178 per cent., the high-water mark, 191 per cent., having been reached in the previous November. These figures, especially in connection with wages, are often cited as representing as it were the minimum necessary expenditure, but attention should be drawn to the note in the *Labour Gazette* that the percentages represent only fluctuations *in prices* on the assumption of a *uniform consumption* since 1914, no allowance being made for possible alterations in consumption which may have modified the expenditure. There has, however, been a very marked alteration in consumption, especially in other than working-class families. In working-class households, of course, the margin for change and economy was less, but still this consideration should not be lost sight of, because a pre-war scale of living certainly need not actually be retained in any household of any description.

Rent.

Special interest attaches to the figures given as to rent, and it is stated that as rents of working-class dwellings continued under the provisions of the Rent Acts they remained unchanged (except in respect of increased rates) until August, 1920, when the increases in the new Act took effect. As a result of those increases the average level of working-class rents, including rates, rose from 10 per cent. above pre-war level at the beginning of 1920 to about 42 per cent. above pre-war level at the end of the year, and of this latter percentage about one-half is accounted for by increases in local rates and water charges, and five-sixths in respect of landlords' responsibility for repairs. The average increase for all items included in the statistics, that is, food, heating, lighting, clothing, rent, etc., combined in accordance with their relative importance in pre-war working-class family expenditure (the average pre-war standard of living being treated as unchanged), at the beginning of this year is given as 165 per cent. above 1914.

Wages.

The cost of living and wages are closely connected, so we turn next to wages. It is unfortunate that in the statistics as to wages no actual percentage figure can be given to be compared with the percentage rise in the cost of living. Besides this, it must be remembered that the figures given in the *Labour Gazette* do not include seamen, agricultural labourers, police, Government employees, domestic servants, shop assistants, and clerks. The changes in rates of wages reported as having taken place in 1920 resulted in an aggregate increase of nearly £4,700,000 in the weekly wages of 7,600,000 workpeople. In 1919 the corresponding totals were about 6,160,000 workpeople and £2,400,000 in weekly wage rates. In 1918, 6,500,000 workpeople received advances amounting to about £3,200,000 a week. The years 1910–1916 were years of rising wages, but during that period of seven years the whole increases in weekly wages recorded in the same industries amounted to less than £2,000,000. It has to be noted, however, that owing to the serious decline in employment in the closing months of the year in many industries the actual weekly earnings were considerably lower at the end of the year. This latter fact is worthy of note, for it shows that high wages are not everything, and that earnings have to be considered; and earnings depend upon employment, and employment depends upon production. These various links in the chain are often lost sight of. In the year reductions in normal weekly full-time hours affected 560,000 workpeople, their recognised full-time working week being reduced by an average of 3.7 hours.

Employment.

At the beginning of 1920 employment was good, and with some exceptions it remained good until June, or even later. In these first months of the year it would have been better but for the general strike of ironfounders, which, after being in force some three months, was settled in January. In January, 1920, in the industries covered by the National Insurance Acts, 1911–1916, the percentage of unemployed was 6.6, but at the end of March it had fallen to 3.6. The trade union figures for the same period were respectively 3.2 and 1.1. At the end of June the percentage of unemployed in industries covered by the National Insurance Acts had fallen to 2.6. Then a slight falling off in employment was apparent, but by the end of September the percentage unemployed had only risen to 3.8 in the insured trades and to 2.2 among trade union members making returns. In October industry, however, received a fresh blow in the coal strike, which commenced on October 16. The actual stoppage of work lasted but fifteen days, but the *Labour Gazette* states that there was an increase of at least 350,000 workpeople unemployed, and in addition large numbers were placed on short time. Though on the settlement of the dispute there was a partial recovery, by the end of November employment was considerably worse than at the beginning of October, and at the end of the year there was serious depression in most of the principal industries.

Trade Disputes.

The number of trade disputes causing a stoppage of work commencing in 1920 was 1,715, and these disputes involved (including those thrown out of work in the establishments where the disputes occurred) about 1,930,000 workpeople. In addition, 90,000 workpeople were involved in disputes which had commenced in 1919, and the aggregate number of working days lost by these 2,000,000 workpeople was about 27,000,000. The number of disputes was greater than any recorded since 1906 when the statistics began; the number of workpeople involved has only been exceeded once, in 1919, and the loss in working days has only twice been exceeded.

Such is the history of 1920, a year when it was vital to us as a commercial country to try to reconstruct our trade in every possible way, not only in our own interests but in the interests of the whole civilised world. It cannot be denied that two great trade disputes, that in the engineering industry and that in the coal-mining industry, placed a serious check on trade, with results which are incalculable. It is unnecessary and undesirable to attempt to attribute blame for these on one party or the other, but they affect the community, and all classes must be interested in seeing how the mistakes of the past can be avoided. The loss of 27,000,000 working days with a depleted treasury represents a loss it is impossible to calculate. There is the permanent loss of trade, the difficulty of starting works, and many elements which cannot accurately be estimated, but a rough estimate can be made of one item of loss—wages; for with wages at their present level a very modest computation of the loss involved by 27,000,000 working days would be £18,000,000. Even if a strike ends in securing an increase of wages to those involved directly in the dispute, the aggregate money gain must be small compared to the total loss incurred by the community, and the disputants themselves may suffer indirectly, and having expended so much life and treasure to put an end to militarism abroad it now behoves us to bestow time and energy in securing a peaceful method of settling our industrial disputes at home.

WORKMEN'S COMPENSATION.

SOME very important points seem to have been raised in the recent case Reid *v.* British and Irish Steam Packet Co., Ltd. (the *Times*, February 4). The applicant was a quay foreman, and his duties were to supervise two or more gangs of dock labourers, but occasionally, if required, to lend a hand in the manual labour. He had given an order to a man as to his work when the man struck him a blow in the eye, and as one of his eyes was already defective the result of this was to render him nearly blind. The three points raised in the case were: (1) Was this an injury due to an accident arising out of his employment? (2) Was the applicant employed "by way of manual labour"? and (3) Did his remuneration exceed £250 a year?

As regards the first point, the Court of Appeal, following the decision of the House of Lords in Trim Joint District School *v.* Kelly (1914, A.C. 667), held that as the man had to control a "rough lot," the assault was a possibility incidental to his employment, a possibility greater than that to which a member of the public was exposed, and, therefore, the assault was an accident arising out of the employment.

As regards the second point, following a decision of the Court of Appeal in a case not yet reported (Jaques *v.* Owners of the tug "Alexandria"), the court held that the test under the Act was not whether a man did any manual labour, but whether the main object of the employment was manual labour, or otherwise. Adopting this test, the court held the applicant was engaged "otherwise than by way of manual labour."

This raised the third point: Did the man's remuneration exceed £250 per annum so as to render him not a "workman" under the Act? The man at the time of the accident was earning £21 a month, and his employment was terminable by a month's notice, but he had been in the same employ for twenty-one years, and his employers were thoroughly satisfied with him. The court held that his remuneration did exceed £250 a year, and he was, therefore, excluded from the Act, being employed otherwise than by way of manual labour at a remuneration exceeding £250 a year.

We shall have to refer to this third point when the case is reported in the Law Reports, for, owing to the decision in Griffith *v.* Owners of the sailing ship "Penrhyn Castle" (*The Builder*, March 2, 1917), it was argued that either it must be shown that the workman had actually earned £250 in the year or that he was engaged under a contract which would make his earnings £250 before its possible determination.

In the case under consideration, as reported, it does not clearly appear whether the man in the same employ had in fact earned £250 in the twelve months or whether the court regarded his prospective earnings. Lord Justice Scrutton pointed out that owing to the great rise in wages the limit of £250 in the Act would exclude a great many persons who formerly would have been within the Act. This limit, however, only applies in the case of persons employed otherwise than by the way of manual labour.

Dilution in the Building Trade.

At a meeting of the National Federation of Building Trade Operatives, which took place at the Euston Empire, King's Cross, on Sunday evening last, Mr. R. Coppock, general secretary, referring to the Government's proposals for increasing the supply of building trade labour, said: "They are going to ask the bricklayers, plasterers, and slaters to dilute themselves from the labourers inside their own particular crafts. If I know anything about the first-named there will be no sectional movement as far as they are concerned. The days of sectionalism are gone. We have got to look forward to one organisation in the industry." Meanwhile it is reported that the master builders' representatives have had several meetings with the Cabinet on the matter.

CANNON-STREET BRIDGE.

AT the meeting of the Institution of Civil Engineers, on February 8, Mr. George Ellson, O.B.E., read a paper on "Cannon-street Bridge Strengthening." After a description of the present bridge (built in 1865–6), and a comparison with Charing Cross Bridge (built a year or so earlier by the same engineer), he said the former was noticeable in that the "continuous girder" principle was embodied both in the main girders of the bridge over the three middle spans and in the distributing-sill girders over the piers, whilst free-span girders were employed in the north and south spans. All the girder work was of the plate web type.

The increase in the weight of locomotives was the reason for the strengthening of the bridge in question being carried out, as prior to the work being done traffic restrictions had to be imposed on the bridge to avoid the working stress being unduly high. After investigation as to the loads which would be imposed on the London clay on which the piers were founded, it was decided that nothing need be done to strengthen the main supports, but it was found necessary to afford relief to the entire superstructure of the bridge. The scheme adopted for strengthening the bridge platform consisted of the introduction of entirely new girders fixed between the existing ones, thus directly relieving the old girders of a considerable portion of load. The new and old girders were connected by rows of diaphragms, the object aimed at being to ensure that both worked in unison. The fact that the railway traffic had not to be interfered with on the bridge during the operations, and also the necessity for not interfering with the water-borne traffic on the river, influenced the design of the girders, and materially affected the method of erection of the new work, as all the work had to be done from below the surface of the bridge. It was necessary to have the temporary stagings which were constructed in the river of a strength sufficient to sustain heavy point-loads, and at the same time to withstand any accidental collision from passing craft on the river, which at this point was very difficult to navigate owing to cross currents caused by the bend in the river and the proximity of London Bridge and the then existing old Southwark Bridge. Certain work on the main girders carrying a constant heavy dead load rendered necessary the exercising of great care, and the additional plating was done at night after traffic had ceased on the running roads above. The number of existing rivets which were disturbed at one time was reduced to a minimum, and no existing rivet holes were left vacant, but were immediately plugged with special steel plugs after the rivets were cut out until the new rivets were put in, so as to avoid local changes in stress.

The erection presented special difficulties on account of the restricted space in which it was necessary to work. The average weight of the free-span girders was about 75 tons. The continuous girders, six in number, each weighing about 187½ tons, and of a length of 443 ft., were got into position by threading them between the existing girders from the south span of the bridge.

During the launching process it was necessary continually to adjust the height of the rollers on one or the other of the stagings, owing to the varying levels of the different spans of the bridge previously mentioned, and also owing to the stops in the different layers of the flange plates. Great care was exercised to ensure that no set of rollers received more than its proper share of the load, the exact weight at any point of bearing being determined by means of hydraulic ship-jacks fitted with pressure gauges. The load shown thereby was checked against the calculated weight under similar conditions.

The method of preventing corrosion of the metal work by protecting coatings of tar was discussed by the author, and it was stated that the results of the application of tar to the old work of the bridge many years previously had proved satisfactory. As a result of that experience the bulk of the new girder-work was tarred, but a proportion was also painted, with the object of testing the efficiency of the several different materials used.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Accrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Altrincham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Ashton-under-Lyne	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½	
Barnsley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Barrow-in-Furness	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Barry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Bath	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bedford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Birkenhead	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½	
Birmingham	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/1	
Bishop Auckland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Blackburn	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Blackpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Bolton	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Bournemouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bradford	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Bridgwater	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½
Brighton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bristol	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Burnley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Burton-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Bury	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Cambridge	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Cardiff	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Chatham	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Chelmsford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Cheltenham	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Chester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Chesterfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Colchester	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Coventry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Crewe	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11	
Darlington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Derby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Doncaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Dudley	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Durham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
East Glam. and Mon. Valleys	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Exeter	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Folkestone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Gloucester	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Grantham	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Grays	2/4	2/4	2/4	2/4	2/4	2/4½	2/3	2/1	
Grimsby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Great Yarmouth	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Guildford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Halifax	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Harrogate	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hartlepools	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hastings	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Hereford	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Huddersfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hull	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Ipswich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Lancaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Leamington Spa	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Leeds	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Leicester	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Lichfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Lincoln	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Liverpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½	
Llanelly	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
London	2/4	2/4	2/4	2/4	—	2/4½	2/3	2/1	
Loughborough	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Luton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Maidstone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Manchester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Mansfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/3	2/2½	1/11½	
Merthyr Tydfil	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Middlesbrough	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Newcastle-on-Tyne	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Newport, Mon.	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Northampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Norwich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Nottingham	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Oakham	2/1	2/1	2/–	2/1	2/1	2/1	2/4	1/10	
Oldham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Oxford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Plymouth	2/1	2/1	2/1	2/1	2/1	2/1	2/–	1/10	
Pontypridd	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Portsmouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Preston	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Reading	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Rochdale	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½	
Rochester	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Rugby	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
St. Albans	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/8	
St. Helen's	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Scarborough	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Sheffield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Shrewsbury	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Southampton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Southend-on-Sea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/11½	2/0–2/0½	
Southport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
South Shields	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Stockport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Stockton-on-Tees	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/11½	
Stoke-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/9	
Stroud	2/–	2/–	2/–	2/–	2/–	2/–	1/11½	2/1	
Sunderland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Swansea	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/9	
Taunton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Torquay	2/–	2/–	2/–	2/–	2/–	2/–	2/–	2/1	
Wakefield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/11½	
Walsall	2/2½	2/2½	2/2½	2/2½	2/2½	2/3½	2/2½	2/0–2/0½	
Warrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
West Bromwich	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Wigan	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/9	
Windsor	2/–	2/–	2/–	2/–	2/–	2/–	2/–	2/1	
Wolverhampton	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/11½	
Worcester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
York	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts xiii; Competitions iv; Public Appointments lxxiii; Sales by Auction lxxxviii. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

FEBRUARY 18.—**Denton.**—RENOVATIONS.—At Denton Council School, internal renovations, relaying floor boards, &c. West Riding Education Architect, County Hall, Wakefield.

FEBRUARY 18.—**Faversham.**—SHEDDING.—Erecting shedding, offices, stands and other works for the Agricultural Show, at Faversham on July 6 and 7, for the East Kent Agricultural Society. Mr. Spencer Collard, Secretary, Great Pett, Bridge, Canterbury.

*FEBRUARY 18.—**Slough.**—HOUSES, ROADS, SEWERS.—Erection of whole or part of houses in the following parishes: Hitchin, 24; Farnham Royal, 8; Iver-Heath, 20; Denham, 12; Iver, 76; Langley Marish, 120; Datchet, 30. Also roads and sewers at all the above except Denham, for Eton R.D.C. Director of Housing Schemes, 160, High-street, Slough. Deposit, £2 2s.

FEBRUARY 18.—**Stanley.**—LAVATORY ACCOMMODATION.—At Lofthouse Gate Council School, provision of lavatory accommodation. West Riding Education Architect, County Hall, Wakefield.

FEBRUARY 18.—**Warwick.**—HOUSES.—Erection of houses for the working classes in the parish of Cubbington, for the R.D.C. Mr. Hugh Trepess, architect, 1, Church-street, Warwick. Deposit £1 1s.

FEBRUARY 19.—**Brentford.**—ALTERATIONS AND ADDITIONS.—Alterations and additions to the boiler house yard, Warkworth House, Isleworth. Mr. F. E. Harmsworth, Clerk to the Guardians, Union Offices, Isleworth, Middlesex.

FEBRUARY 19.—**Bristol.**—VARIOUS WORKS.—(1) Repairs, painting, &c., to four houses in Southmead-road; (2) various works (alterations, etc., at Stapleton Institution; (3) Plastering, painting, etc., in Ward 150 and lobby, at Eastville Institution; (4) alterations, plastering, painting, &c., in several wards (second line), at Eastville Institution, for the Board of Guardians. Mr. J. J. Simpson, Clerk, St. Peter's Hospital, Bristol.

FEBRUARY 19.—**Halifax.**—HOUSES.—Erection of 40 houses at Wakefield-road, for the T.C. Mr. James Lord, Borough Engineer, Halifax. Deposit, £2 2s.

FEBRUARY 19.—**Inverness.**—HOUSES.—Erection of 12 double blocks of houses at Newtonmore (three blocks), Kincraig (two blocks), Lynwilg (one block), Aviemore (one block), Boat-of-Garten (one block), Nethy Bridge (two blocks), Carrbridge (two blocks), for the C.C. Mr. Alex. Cattonach, architect, Kingussie.

FEBRUARY 19.—**Methley.**—HOUSES.—Erection of 58 dwelling houses, for the U.D.C. Mr. Thos. Thompson, surveyor, Red House, Methley.

FEBRUARY 19.—**Morley.**—MILL.—Erection of woollen mill, for Mr. S. C. Johnson. Mr. A. T. Buttery, architect, Queen-street, Morley.

FEBRUARY 19.—**Salford.**—MORTUARY.—Erection of public mortuary at Pendleton Town Hall, for the T.C. Borough Engineer, Salford. Deposit £2 2s.

FEBRUARY 19.—**Settle.**—HOUSES.—Erection of 16 houses of various classes at Hellifield, for the R.D.C. Mr. T. A. Foxcroft, Surveyor, Town Hall, Settle. Deposit, £1 1s.

FEBRUARY 21.—**Cardiff.**—RENOVATIONS.—Renovations, &c., at the Children's Homes at (*a*) Headquarters, Ely, and Cowbridge-road, (*b*) Canton, (*c*) Roath, Cathays, Grangetown and Penarth, (*d*) Barry and Dinas Powis, for the Board of Guardians. Mr. Arthur J. Harris, Clerk, 11, Park-place, Cardiff.

FEBRUARY 21.—**East Grinstead.**—HOUSES.—Erection of 40 houses in the Parishes of Worth, West Hoathly, Forest Row and Hartfield, for the R.D.C. Mr. Charles Turton, Architect, 36, High-street, East Grinstead. Deposit £1 1s.

FEBRUARY 21.—**Edinburgh.**—PAINTING.—For painting at workshops in Bellevue Park, for the Education Committee. Education Offices, Edinburgh.

FEBRUARY 21.—**Hulne Cultram.**—LAVATORY.—Construction of lavatory at Silloth, for the U.D.C. Mr. R. Higginson, architect, 6, Lowther-street, Carlisle.

FEBRUARY 21.—**Leeds.**—HOUSES.—Erection of 56 houses on the Hawksworth Wood Estate, for the T.C. Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds. Deposit, £1 1s.

FEBRUARY 21.—**Maidstone.**—HOUSES.—Erection of eight houses at Marden, for the R.D.C. Mr. F. Post, Clerk, Council Offices, King-street, Maidstone.

FEBRUARY 21.—**Preston and Upwey.**—COTTAGES.—Erection of five pairs of semi-detached cottages in the parish of Preston, and five similar pairs in the parish of Upwey, for the Weymouth R.D.C. Mr. G. A. Andrews, F.I.S.E., 157, Dorchester-road, Weymouth. Deposit £1 1s.

FEBRUARY 21.—**Sheffield.**—PAINTING.—Painting of chapels, &c., at Attercliffe, Norton and Darnall Cemeteries, for the T.C. Mr. E. F. P. Edwards, City Architect, Town Hall, Sheffield.

FEBRUARY 21.—**Stoke-on-Trent.**—PAINTING.—For painting museum of Wedgwood Institute, Burslem, for the T.C. Mr. A. Burton, Borough Surveyor, Stoke-on-Trent.

FEBRUARY 21.—**Weymouth.**—HOUSES.—Erection of five pairs of semi-detached cottages in the parish of Preston, and five pairs in Upwey, for the R.D.C. Mr. G. A. Andrews, Architect, 157, Dorchester-road, Weymouth. Deposit, £1 1s.

FEBRUARY 22.—**Barrow-in-Furness.**—LIBRARY.—Construction of public library, for the T.C. Borough Engineer, Barrow-in-Furness.

FEBRUARY 22.—**Chiswick.**—WALL.—Construction of concrete wharf wall, &c., at the River Depôt, Corney Reach, for the U.D.C. Mr. Edward Willis, Surveyor, Town Hall, Chiswick.

FEBRUARY 22.—**Hollingworth.**—HOUSES, &c.—Erection of 12 or more houses, in pairs, on the Greenlane site, and construction of a road and sewer in connection, for the U.D.C. Mr. H. Wilson, Clerk, Norfolk-square, Glossop. Deposit, £3 3s.

FEBRUARY 22.—**Leyton.**—CLEANSING AND PAINTING.—Cleansing and painting of the Capworth-street and Norlington-road Schools during the Easter holidays (75 per cent. local labour) for the U.D.C. Mr. John H. Jacques, Lic.R.I.B.A., 2, Fen-court, Fenchurch-street, E.C.3. Deposit, £1.

FEBRUARY 22.—**Maldon.**—HOUSES.—Erection and completion of 88 houses in pairs, for Maldon R.D.C. Mr. Wm. Almond, surveyor, 6, Market-hill, Maldon.

FEBRUARY 22.—**Stranraer.**—HOUSES.—Erection of 20 houses, for the T.C. Mr. John Bennoch, Town Clerk, Stranraer. Deposit, £1 1s.

FEBRUARY 22.—**Treherbert.**—RE-BUILDING.—Rebuilding "The Royal Oak Hotel," Treherbert, for Rhondda Valley and Ely Breweries, Ltd. Mr. W. D Morgan, architect, 194, Ystrad-road, Pentre, Rhondda. Deposit £3 3s.

FEBRUARY 23.—**Edinburgh.**—WALLS.—Erection of walls near "Meggetland," in connection with street widening, for the T.C. Mr. James Sim, City Road Surveyor, City Chambers, Edinburgh.

FEBRUARY 23.—**Hemsworth.**—PAINTING.—For the outside painting work at the Poor-Law Institution, for the Board of Guardians. Mr. W. T. Lynam, Surveyor, District Council Offices, Hemsworth, near Wakefield.

FEBRUARY 23.—**Nottingham.**—BUILDINGS.—Erection of wooden buildings for use as temporary schools, on five sites. City Architect, Guildhall, Nottingham. Deposit, £1.

FEBRUARY 24.—**Beckenham.**—HOUSES.—Erection of 54 houses on the Shortlands site, for Beckenham U.D.C. Mr. John A. Angell, Surveyor to the Council, Council Offices, Bromley road, Beckenham. Deposit, £2.

FEBRUARY 24.—**Minster.**—ALTERATIONS.—Adaptation of certain wards at Poor-Law Institution, Minster, as nurses' quarters, for the Isle of Thanet Board of Guardians. Master of the Institution, Minster, near Ramsgate.

FEBRUARY 24.—**Ramsgate.**—REPAIRS, &c.—For repair and painting of exterior of municipal offices, for the T.C. Mr. T. G. Taylor, Borough Engineer, Albion House, Ramsgate.

FEBRUARY 24.—**Stourport.**—LAVATORIES.—Erection of public lavatories, for the U.D.C. Mr. A. D. Capel Loft, Clerk, Bridge-street, Stourport.

*FEBRUARY 25.—**Folkestone.**—BUILDING.—Additions to the Victoria Hospital, Folkestone. Messrs. Bromley & Dahl, architects, Radnor Chambers, Folkestone. Deposit £1 1s.

FEBRUARY 25.—**Great Driffield.**—HOUSES.—Erection of eleven houses, for the U.D.C. Council Offices, 33, Exchange-street, Driffield.

*FEBRUARY 25.—**Lambeth, S.W.2.**—REPAIRS AND RE-DECORATION.—Repairs and re-decoration, internally, of the Tate (Central) Library, Brixton Oval, S.W.2; the Tate (South Lambeth) Library, South Lambeth-road, S.W.8; and the North Lambeth Library, 74, Lower Marsh, S.E.1. Mr. Bruce Penny, Town Clerk, Lambeth Town Hall, Brixton Hill, S.W.2.

FEBRUARY 25.—**Manchester.**—NURSES' HOME.—Erection of a Nurses' Home, at the Booth Hall Infirmary, for the Board of Guardians. Mr. F. H. Overmann, architect, 5, Cavendish-street, All Saints', Manchester. Deposit, £2 2s.

FEBRUARY 25.—**Staffordshire.**—ADAPTATION.—Work required in the adaptation of Westwood Hall, Leek, as a High School for Girls. Mr. Graham Balfour, Director of Education, County Education Offices, Stafford. Deposit, 10s. 6d.

FEBRUARY 26.—**Belgium.**—The Service Special des Bâtiments de la Gendarmerie, Rue de la Presse, 45, Brussels, is calling for tenders for the construction of buildings in concrete blocks and in bricks. Copies of the specification, in French, and plans may be seen upon application to the Enquiry Room, Department of Overseas Trade, 35, Old Queen-street, S.W.

FEBRUARY 26.—**Earby.**—HOUSES.—Erection of four parlour houses, for the U.D.C. Mr. Jas. E. Aldersley, Housing Architect, Council Offices, Earby. Deposit, £1 1s.

FEBRUARY 26.—**Newbiggin-by-the-Sea.**—HOUSES.—Erection of three pairs of "A" type and 47 pairs of "B" type houses, for the U.D.C. Mr. R. Appleby, Surveyor, Council Office, Newbiggin-by-the-Sea.

FEBRUARY 26.—**Witham.**—HOUSES.—Erection of the first group of twelve houses on the Cock's Farm site, for the U.D.C. Mr. W. P. Perkins, surveyor, Colingwood-road, Witham.

FEBRUARY 28.—**Branston.**—SHOW FIXTURES.—Erection of wood or canvas and wood fencing, shedding, loose boxes, partitions for stock and implements, also woodwork as may be required for Grand Stand, &c., at the Staffordshire Agricultural Society's Exhibition at Branston, Burton-on-Trent. Mr. T. H. Garlick, Secretary, Eccleshall.

FEBRUARY 28.—**Clayton.**—HOUSES, &c.—For street forming and drainage and erection of eight houses, for the U.D.C. Messrs. Samuel Jackson & Son, architects, 11, Tanfield Chambers, Bradford.

FEBRUARY 28.—**Croydon.**—REPAIRS, &c.—Repairs and re-decoration and sundry small works at 254, Brighton-road, for the Board of Guardians. Mr. Henry Berney, architect, 33-35, High-street, Croydon. Deposit, £2 2s.

FEBRUARY 28.—**Eastry.**—CHIMNEYS.—Pulling down and re-building of five chimney stacks and re-pointing two chimneys on the Hospital at the Eastry Union Workhouse. Mr. Fred. A. Cloke, Clerk, 51, Strand-street, Sandwich.

FEBRUARY 28.—**Edinburgh.**—DEMOLITION, &c.—Demolition and removal of (1) Brick chimney stalk at the Old Burnhouse Brickworks; and (2) Eight small dwelling-houses at Burnside Terrace, Camps. Mr. James A. Williamson, City Architect, Public Works Office, City Chambers, Edinburgh.

FEBRUARY 28.—**Heanor.**—HOUSES.—Erection of 12 houses in Sedgwick-street, for the U.D.C. Mr. A. G. Wheeler, architect, Eastwood. Deposit, £1 1s.

FEBRUARY 28.—**Innerleithen.**—HOUSES.—Erection of 10 houses in five blocks in Buccleuch-street and 10 houses in five blocks on the Leithen-road, for the T.C. Messrs. Dick, Peddie & Walker Todd, 8, Albyn-place, Edinburgh.

*FEBRUARY 28.—**Lydney.**—HOUSES.—Erection of 30 houses and the completion of 20 partially erected houses upon the Tutnall's-road site at Lydney, Glos., for the R.D.C. Mr. Fothergill Evans, Clerk to the Lydney R.D.C., Chepstow, Mon. Deposit £2 2s.

FEBRUARY 28.—**Wimborne.**—CONVERSION.—Erection and conversion of two huts at Wimborne, for the headquarters of D Co. Dorset Territorial Force Association. Mr. F. T. Maltoy, architect, Dorchester. Deposit £2 2s.

MARCH 1.—**Abbotsbury.**—BUILDINGS.—Erection of coast-guard buildings at Abbotsbury, near Weymouth. Superintending Civil Engineer, H.M. Naval Depôt, Portland.

MARCH 1.—**Almeley.**—RENOVATION.—Renovation of the Mansion House, including additional electric fittings and sanitary work, conversion of existing buildings into a Hospital for Children, for the Herts C.C. Mr. G. H. Jack, County Surveyor, High Town, Hereford. Deposit £5 5s.

MARCH 1.—**Carnarvon.**—ALTERATIONS.—For alterations and repairs at East Gate-street, for the Co-operative Society. Mr. H. G. Thomas, architect, Castle Buildings, Carnarvon.

MARCH 1.—**Dorset.**—COASTGUARD BUILDINGS.—Erection of Coastguard Buildings at Abbotsbury, near Weymouth, Dorset, consisting of houses for four men. Superintending Engineer, H.M. Naval Depot, Portland.

MARCH 1.—**Garvagh.**—MANSE.—Erection of manse, for Presbyterian Church. Messrs. Given & Diamond, Coleraine, Ireland.

MARCH 1.—**Herefordshire.**—RENOVATIONS.—Renovation of the Mansion House, including additional electric fittings and sanitary work, conversion of existing buildings into a hospital for children, the construction of drains and sewage disposal works, for the County Council at the County Sanatorium, Almeley. Tenders marked "Sanatorium," County Surveyors' Office High Town, Hereford.

*MARCH 1.—**London, W.C.1.**—EXTENSION.—Extension to the Museum Telephone Exchange, for the Commissioners of H.M. Office of Works, Storey's-gate, Westminster, S.W.1. Deposit £1 1s.

MARCH 1.—**Pirton, Herts.**—HOUSES.—Completion of 30 houses at Pirton, Herts, for Hitchin R.D.C. Mr. A. E. Passingham, Clerk to the Council, 5, Bancroft, Hitchin, Herts.

MARCH 1.—**Salford.**—HOUSES.—Erection of 122 houses, for the T.C. Mr. G. Westcott, architect, 13, Bridge-street, Manchester.

*MARCH 1.—**Wealdstone.**—HOUSES.—Erection and completion of the whole or any portion of 140 houses, for the U.D.C., in connection with the housing scheme. Mr. R. J. Bryant, Council Offices, Wealdstone. Deposit, £2 2s.

*MARCH 2.—**Croydon.**—PAINTING.—Repair and external painting required at the Croydon Sanatorium, North Cheam, Surrey, for the Croydon and Districts Joint Small-Pox Hospital Board. Mr. R. M. Chart, Surveyor to the Board, Lower-green, Mitcham, Surrey.

*MARCH 2.—**Falmouth.**—HOUSES.—Erection of a further 56 houses at Falmouth. Town Clerk, Municipal Buildings, Falmouth.

*MARCH 2.—**Wandsworth, S.W. 18.**—PAINTING.—Internal painting at St. John's Hill Infirmary, St. John's Hill, Wandsworth, S.W., for the Guardians of the Union. Mr. F. J. Curtis, Clerk, Union Offices, St. John's Hill, Wandsworth, S.W.18.

MARCH 3.—**Letchworth.**—SCHOOL.—Erection and completion of a new County Council School at West View, Letchworth, for Hertfordshire C.C. Lt.-Col. A. Ernest Prescott, County Surveyor, County Surveyor's Office, Hatfield. Deposit £1 1s.

MARCH 3.—**Swansea.**—WALLS, &c.—Taking down of old cottages, Wellington-street, and building of a masonry boundary wall to the Swansea Gas Works, for the T.C. Mr. J. Richard Heath, Borough Engineer, Guildhall, Swansea.

*MARCH 3.—**Wainscot.**—HOUSES.—Erection of 10 houses at Wainscot, for Strood R.D.C., Kent. Messrs. Bridgland & Clay, architects, 198, Parrock-street, Gravesend. Deposit, £2 2s.

MARCH 4.—**Hull.**—PAVILION.—Erection of an Infectious Diseases Pavilion, including drainage, &c., at the Cottingham Castle Estate, for the T.C. Mr. Joseph H. Hirst, City Architect, Guildhall, Hull. Deposit £2 2s.

MARCH 4.—**Rye.**—HOUSES, &c.—Erection of houses in following parishes: Brede, 12 houses and construct two wells and two private roads; Northiam (Mill Corner), six houses and sink one well. Mr. H. M. Jeffery, architect, 1B, Havelock-road, Hastings.

MARCH 5.—**Dunfermline.**—HOUSES.—Erection of 32 houses, for the T.C. Burgh Engineer, City Chambers, Dunfermline. Deposit, £2 2s.

MARCH 7.—**Gourock.**—BUILDING.—Building for the accommodation of pilots at Gourock Pier, for the Caledonian Railway Co., Company's Engineer, Buchanan-street Station, Glasgow. Deposit, £2 2s.

MARCH 7.—**Wigan.**—HOUSES, &c.—Erection of 32 houses, construction of roads, &c., at Shevington, for the R.D.C. Mr. P. Fairclough, surveyor, 18, Victoria-buildings, King-street, Wigan.

✱MARCH 8.—**Broadstairs and St. Peters.**—HOUSES.—Erection and completion of 54 houses on land situate at St. Peters. Mr. E. E. Moodey, architect, 109, High-street, Broadstairs. Deposit £2 2s.

MARCH 8.—**Lincoln.**—ADDITIONS.—For additions and improvements to Branston Hall, near Lincoln, to fit it up as a County Sanatorium, and for the erection of an open-air school in connection, for the Lindsey C.C. Messrs. Scorer & Gamble, architects, Bank-street Chambers, Lincoln. Deposit, £2 2s.

MARCH 9.—**Hackney.**—EXTENSION.—For building works, being an extension of the electricity power house at Millfields-road. Borough Electrical Engineer, 306, Mare-street, Hackney, E. 8. Deposit, £5 5s.

MARCH 9.—**Rufford.**—SANATORIUM BUILDINGS.—Erection of additional buildings at Rufford Hall Sanatorium, Rufford, Lancaster, for H.M. Commissioners of Works. Director of Contracts, H.M. Office of Works, London, S.W.1. Deposit, £1 1s.

✱MARCH 9.—**Lancaster.**—ADDITIONAL BUILDINGS.—Erection of additional buildings at Rufford Hall Sanatorium, Rufford, Lancaster. Director of Contracts, H.M. Office of Works, London, S.W.1. Deposit £1 1s.

MARCH 9.—**Liverpool.**—PARCELS OFFICE.—Erection of Liverpool New Parcels Office, for the Commissioners of His Majesty's Works. Director of Contracts, H.M. Office of Works, London, S.W.1. Deposit £1 1s.

✱MARCH 15.—**Brentford U.D.C.**—HOUSES.—Erection of 70 houses, either in one contract or, alternatively, for blocks of 20, 20 and 30 thereof in three separate contracts, on land fronting Ealing and Whitestile-road, Brentford, for the U.D.C. Mr. W. J. W. Westlake, Engineer and Surveyor to the Council, Clifden House, Boston-road, Brentford.

✱MARCH 17.—**Southampton.**—HOUSES.—For building any number of houses, up to a maximum by one builder of 100, in pairs of parlour and non-parlour types. Mr. R. R. Linthorne, Town Clerk, Municipal Offices, Southampton.

✱NO DATE.—**Epsom.**—HOUSES.—Erection of 161 houses, forming the second and third batches of cottages off Dorking-road, Epsom. Mr. E. G. Wilson, Clerk of the Council, Church-street, Epsom.

✱NO DATE.—**Hitchin.**—COTTAGES.—Erection of 104 cottages on various sites, for the R.D.C. Mr. A. E. Passingham, Clerk to the Council, 5, Bancroft, Hitchin, Herts. Deposit £2.

NO DATE.—**Liverpool.**—FACTORY.—Erection of a factory at Litherland, near Liverpool, for Messrs. Lewiss, Ltd. Messrs. G. de C. Fraser & Ainley, architects, 26, North John-street, Liverpool.

NO DATE.—**Swinton.**—REPAIRS.—Repairs to cottage property, for the U.D.C. Mr. W. T. Postlethwaite, Clerk, Council Offices, Swinton, near Manchester.

FURNITURE, MATERIALS, etc.

FEBRUARY 18.—London.—DUSTBINS.—Supply to the Commissioners of H.M. Works, of 1,000 galvanised iron sanitary dustbins. The Director of Contracts, H.M. Office of Works, Storey's-gate, S.W.

FEBRUARY 18.—Woking.—ROAD MATERIALS.—Supply of granite and tarred slag, to the U.D.C. Mr. G. J. Wooldridge, Surveyor, Council Offices, Woking.

FEBRUARY 19.—Bedford.—ROAD MATERIALS.—Supply of road material and cartage, for the C.C. County Surveyor, Shire Hall, Bedford.

FEBRUARY 19.—Thirsk.—MATERIALS.—Supply of road and other materials to the R.D.C. Mr. John W. Lupton, Highway Surveyor, Thirsk.

FEBRUARY 21.—**Bognor.**—TAR.—Supply of 10,000 gallons of No. 2 Road Board standard tar, to the U.D.C. Mr. Joseph Jubb, Clerk, Bognor.

FEBRUARY 21.—**Market Harborough.**—MATERIALS.—Supply of road materials, pipes, &c., to the U.D.C Mr. H. G. Coales, Surveyor, Urban District Council Offices, Market Harborough.

FEBRUARY 21.—Mitcham.—MATERIALS.—Supply of tools, &c., manhole covers and gully gratings, sewerage ironwork, pipes, gullies, &c., cement, to the U.D.C. Surveyor's Office, Broadway House, Lower Mitcham.

FEBRUARY 21.—Rawtenstall.—MATERIALS.—Supply of materials to the T.C. Borough Surveyor, Town Hall, Rawtenstall.

FEBRUARY 21.—Waltham Cross.—MATERIALS.—Supply of road materials to the U.D.C. Mr. W. C. Holloway, Surveyor, Town Hall, Waltham Abbey.

FEBRUARY 22.—Deptford.—MATERIALS.—Supply of materials to the B.C. Mr. A. Purkis, Town Clerk, Town Hall, New Cross-road, S.E.

FEBRUARY 23.—**Goole.**—MATERIALS.—Supply of road and sewer materials, to the U.D.C. Mr. J. H. Castle, Surveyor, Council Offices, Goole.

FEBRUARY 23.—**Hackney.**—MATERIALS.—Supply of road and other materials, to the B.C. Borough Engineer, Town Hall, Hackney, E. Deposit, 10s.

FEBRUARY 23.—London.—HARDWARE.—The South Indian Railway Company, Ltd., invite tenders for the supply of hardware. Company's Office, 91, Petty France, Westminster, S.W.1.

FEBRUARY 23.—London.—ROAD MATERIALS.—Supply to H.M. Commissioners of Works of road materials. Director of Contracts, H.M. Office of Works, Storey's-gate, S.W.

FEBRUARY 23.—Madras.—PIPES, &c.—Supply of stoneware pipes and specials, varying from 4 in. to 18 in. diam., and aggregating a total length of about 76 miles, for the Madras Corporation. Messrs. James Mansergh & Sons, Agents to the Corporation, 5, Victoria-street, Westminster, S.W.1. Charge 5s.

FEBRUARY 23.—**Old Hill.**—MATERIALS.—Supply of broken road stone, kerbs, setts and ¾-in. chippings, to the U.D.C. Mr. Daniel Wright, Clerk, Old Hill, Staffordshire.

FEBRUARY 23.—**Pontefract.**—ROAD MATERIALS.—Supply of materials for the repair of the highways, for the R.D.C. Mr. Geo. W. Hobman, Clerk, 29, Ropergate, Pontefract.

FEBRUARY 23.—Twickenham.—MATERIALS.—Supply of materials for one year to the U.D.C. Mr. F. W. Pearce, Surveyor, Town Hall, Twickenham.

FEBRUARY 24.—**Gravesend.**—TAR.—Supply of 20,000 gallons of both crude and dehydrated tar for road tarring purposes, to the T.C. Mr. H. H. Brown, Town Clerk, Gravesend.

FEBRUARY 24.—**Greenwich.**—ROAD MATERIALS.—Supply of road materials, to the B.C. Borough Engineer, Town Hall, Greenwich-road, S.E.10.

FEBRUARY 24.—**Hampton.**—ROAD MATERIALS.—Supply of road materials to the U.D.C. Mr. S. H. Chambers, Surveyor, Public Offices, Hampton, Middlesex.

FEBRUARY 24.—Plymouth.—MATERIALS.—Supply of fire hydrants, lead pipe and pig lead, stop cocks, ferrules, &c., cast-iron work and sluice valves, to the Waterworks Department. Mr. Frank Howarth, Water Engineer, Old Guildhall, Plymouth.

FEBRUARY 25.—**Merton and Morden.**—MATERIALS.—Supply of road materials to the U.D.C. Mr. C. J. Mountifield, Clerk, District Council Offices, Kingston-road, Merton, S.W.19.

FEBRUARY 25.—Plymouth.—GAS STOVES.—Supply to the Gas Department of cookers, &c., meters, pipe, main cocks and brass goods, pendants, brackets, and sundries. Mr. W. P. Tervet, Manager, Gas Works, Devonport.

FEBRUARY 26.—Durham.—ROAD MATERIALS.—Supply of road materials to the C.C. Mr. Albert E. Brookes, County Surveyor, Shire Hall, Durham.

FEBRUARY 26.—**East Dereham.**—ROAD MATERIALS.—Supply of 3,500 tons of granite and 400 tons of slag, to the U.D.C. Mr. W. Astley Norris, Surveyor, Council Offices, Dereham, Norfolk.

FEBRUARY 26.—**Harrogate.**—MATERIALS.—Supply of road and other materials to the T.C. Mr. C. E. Rivers, Borough Engineer, Municipal Offices, Harrogate.

FEBRUARY 26.—Knaresborough.—MATERIALS.—Supply of annealed and ironstone slag and refined tar. Mr. J. G. Husband, Highways Surveyor, 14, Bower-road, Harrogate.

FEBRUARY 26.—**Lexden.**—MATERIALS.—Supply of road materials to R.D.C. Mr. W. H. Filer, Victoria Chambers, Colchester.

FEBRUARY 26.—**Walsall.**—MATERIALS.—Supply of materials for one year, to the R.D.C. Mr. W. P. Young, District Surveyor, Council Offices, Daw End, Rushall, Walsall.

FEBRUARY 28.—London.—SANITARY FITTINGS.—Supply to the Commissioners of H.M. Works of 200 w.c. sets. Director of Contracts, H.M. Office of Works, Storey's-gate, S.W.

FEBRUARY 28.—**Southwell.**—ROAD MATERIAL.—Supply of road material to the R.D.C. Mr. Robert Morris, Highway Surveyor, Easthorpe, Southwell.

MARCH 1.—**Derby.**—MATERIALS.—Supply of materials to the T.C. Mr. C. A. Clews, Borough Surveyor, Babington-lane, Derby.

MARCH 2.—**Caistor.**—MATERIALS.—Supply of granite, slag, tar macadam and distilled tar, to the R.D.C. Surveyor, Council Offices, Caistor, Lincolnshire.

✱MARCH 2.—**Hove.**—MATERIAL.—Supplying Portland cement, stoneware pipes, artificial stone paving slabs and broken granite to the Borough of Hove, for one year, commencing 1st April next. Mr. H. B. Scott, Borough Surveyor, Town Hall, Hove.

MARCH 2.—**Southwark.**—MATERIALS.—Supply of materials to the B.C. Town Hall, Walworth-road, S.E.17.

MARCH 3.—**Flaxton.**—MATERIAL.—Supply of whinstone and broken slag to the R.D.C. Surveyor, 4, New-street, York.

MARCH 3.—**Strood.**—MATERIALS.—Supply of highway materials and carting, for the R.D.C. Mr. L. Randerson, Surveyor, Meopham, near Gravesend.

MARCH 4.—**East Ham.**—MATERIALS.—Supply of road and other materials to the B.C. Mr. C. Eustace Wilson, Town Clerk, East Ham, E.

MARCH 5.—Padiham (Lancs.).—ROAD MATERIALS, &c.—Supply of materials, to the U.D.C. Mr. R. Ratcliffe, Surveyor, Council Offices, Padiham.

MARCH 5.—**South Shields.**—MATERIALS.—Supply of road and other materials, to the T.C. Mr. F. P. Sissons, Borough Engineer, Town Hall, South Shields.

MARCH 7.—Midlothian.—TAR, &C.—Supply of refined coal tar, coal tar pitch, and pitch oil, for the C.C. Road Office, County Buildings, Edinburgh.

ENGINEERING, IRON AND STEEL

FEBRUARY 19.—Leicester.—SCREENS.—Supply and erection of screens for straining condensing water for the Electricity Department. Mr. T. R. Smith, City Electrical Engineer, Leicester.

FEBRUARY 21.—Aberdeen.—CONVEYORS, &c.—Supply and erection of temporary and permanent coal conveyors and chutes, &c., for the T.C. City Electrical Engineer, Electricity Works, Millburn-street, Aberdeen.

FEBRUARY 21.—Amsterdam.—BRIDGE.—For bridge work for the Hollandsche Yseren Spoorweg Maatschappy. H.M. Consul-General, Rotterdam.

FEBRUARY 21.—**London.**—ELECTRIC BELL FITTINGS.—Supply of (1) electric bell fittings, to H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W.1.

FEBRUARY 22.—**Mortlake.**—JETTY, &C.—Construction of a timber pile jetty and for excavating or dredging a landing berth on the bank of the River Thames, Mortlake, for the Surrey C.C. Mr. W. P. Robinson, County Surveyor, County Hall, Kingston-on-Thames.

FEBRUARY 23.—**Manchester.**—CUPOLA.—Erection of cupola for iron-foundry, for the Tramways Dept. Mr. J. M. McElroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

FEBRUARY 23.—Pretoria, S.A.—POWER STATIONS, &c.—Tenders are invited by the Department of Irrigation, Pretoria, for supply and erection of power stations, cableways, quarry plant, rock-crushing plant, concrete mixing plant and locomotive. High Commissioner for the Union of South Africa, 32, Victoria-street, Westminster, London, S.W.1. Deposit £5 5s.

FEBRUARY 23.—**Swindon.**—RAILWAY MATERIALS.—Supply of iron and steel goods, for the Great Western Railway Co. Stores Superintendent, Swindon.

FEBRUARY 24.—**Wandsworth.**—CHIMNEY SHAFT.—New wrought-iron chimney shaft to steam boiler, at St. James' Infirmary, Ouseley-road, Balham, for the Board of Guardians. Mr. F. J. Curtis, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.18.

FEBRUARY 25.—**Swansea.**—REPAIRS TO GATES.—Repairing the iron gates to the various entrances to Swansea Market, for the T.C. Mr. Ernest E. Morgan, Borough Architect, 3, Prospect-place, Swansea.

FEBRUARY 28.—Duncansby Head.—CONSTRUCTION.—Construction of a fog signal and lighthouse station, consisting of a block of three dwelling houses and engine room and stores block and a small tower, &c., 1¼ mile of approach road, and a store at John o' Groats. Mr. C. Dick Peddie, Secretary, Northern Lighthouse Office, 84, George-street, Edinburgh. Deposit, £2 2s.

MARCH 1.—Portsmouth.—PLANT.—For engines, plant, &c., for main drainage, for the T.C. Mr. G. Midgley Taylor, 36, Victoria-street, S.W.1. Deposit £5.

MARCH 1.—**Swansea.**—STEEL SHEDS.—Supply and erection of buildings in steel framing, with corrugated steel sheeting: (1) Shed for steam wagons and rollers and garage for motor-car; (2) shed for electric vehicles, for the T.C. Mr. Richard Heath, Borough Engineer, Guildhall, Swansea.

MARCH 3.—Johannesburg.—WATER METERS.—Supply of 1,200 ¼ in. water meters, to the Municipal Council. Engineering Office of the Department of Overseas Trade, 35, Old Queen-street, S.W.

MARCH 4.—Bombay.—REFUSE DESTRUCTOR.—Manufacture, erection and equipment of a refuse destructor within the City for the incineration of 200 tons of refuse per day. Sir John Wolfe Barry, Lyster & Partners, Dartmouth House, 2, Queen Anne's Gate, Westminster, S.W.1. Charge, 5s.

MARCH 5.—**Southampton.**—QUAY WORKS.—Constructing a new head (ferro-concrete) to the Town Quay, for the Harbour Board. Mr. E. Cooper Poole, Engineer, Harbour Board Offices, Town Quay, Southampton. Deposit, £1.

MARCH 16.—**Wallasey.**—GAS PLANT, &C.—(1) The supply, welding up, and testing of about 4 miles of high pressure steel mains, 12 in. to 6 in. diameter; (2) supply of six 6 in. district gas governors, with valves; (3) manufacture and erection of two rotary gas exhausters, with steam engines combined; (4) manufacture and erection of three rotary gas compressors, with steam engines combined; (5) manufacture and erection of roofing over three bays of a new purifier house. Mr. J. H. Crowther, Engineer, Gasworks, Limekiln-lane, Wallasey.

MAY 2.—South Africa.—GRAIN ELEVATORS.—Construction of (*a*) one terminal grain elevator at Cape Town, capacity 30,000 tons of 2,000 lbs.; (*b*) one terminal grain elevator at Durban, capacity 42,000 tons of 2,000 lbs.; (*c*) 34 country elevators, ranging in capacity from 1,800 to 5,800 tons of 2,000 lbs. High Commissioner for the Union of South Africa, 32, Victoria-street, London. Deposit £100.

MAY 31.—**Bombay.**—WATER WORKS.—Construction of about 105 miles of steel and reinforced concrete pipe lines (from 72 in. to 57 in. diameter), and contingent works, for the Corporation. Messrs. Taylor & Sons, consulting engineers, 36, Victoria-street, Westminster, London, S.W. Deposit, £2 each specification (8).

JUNE 15.—**Walton-on-Thames.**—PUMPING MACHINERY.—Supply and erection of pumping machinery near Walton-on-Thames, Surrey, for the Metropolitan Water Board. Mr. Henry E. Stilgoe, Chief Engineer, Offices, Rosebery-avenue, E.C. Deposit, £5.

JUNE 20.—**China.**—BRIDGE.—The Peking-Hankow Line (Chinese Government Railways) invites sealed proposals for designing and building a new steel bridge, about 2,800 metres in length, across the Yellow River (Hoangho). Plans, &c., by telegraph from the following offices: Peking-Hankow Railway, Peking, China; Chinese Legation, London; British Legation, Peking, China. Deposit £6.

ROAD, SANITARY, AND WATER WORKS.

FEBRUARY 21.—**Coulsdon.**—ROADS.—Making-up of Little Roke bye-road, Kenley, for the U.D.C. Mr. R. Chart, Surveyor, Purley.

FEBRUARY 21.—**Godstone.**—ROADS.—For tarwashing the highways in their district during 1921, with distilled tar and tarvia B composition, for the R.D.C. Mr. Geo. E. Crowter, Surveyor, Council Offices, New Oxted, Surrey.

FEBRUARY 21.—**Hereford.**—TARSPRAYING.—Tar spraying of main roads for the year, for the C.C. Mr. G. H. Jack, County Surveyor, High Town, Hereford.

FEBRUARY 21.—**Irvine.**—ROADS.—Supplying and laying about 4,000 square yards of whinstone setts, for the T.C. Burgh Surveyor, Irvine. Deposit, £1 1s.

FEBRUARY 21.—**Kirkcaldy.**—WATER WORKS.—Constructing concrete tank at Navitie, cutting tracks for and laying and jointing about 2 miles of 18 in. and 7 in. cast-iron pipes, &c., for the District Committee. Messrs. J. & A. Leslie & Reid, engineers, 72a, George Street, Edinburgh. Deposit, £1.

FEBRUARY 21.—**Marylebone.**—MATERIALS AND WORK.—Supply of materials and work for twelve months, commencing April 1, 1921, for the Metropolitan Borough. Mr. James Wilson, Town Clerk, Town Hall, Marylebone-road, N.W.1, endorsed "Tender for, &c."

FEBRUARY 21.—**Plymouth.**—ROADS.—Making-up Compton Park-road, Langham-place, South View-terrace-lane South, Ford Park-road-lane, and Fellowes-place-lane, for the T.C. Mr. T. Peirson Frank, Borough Engineer. Municipal Offices, Plymouth.

FEBRUARY 21.—**Southall-Norwood.**—STREET WORKS, ETC.—Construction of road works, removal of old buildings and alterations to the Manor House in the widening of the Green, for the U.D.C. Mr. Charles G. Else, Joint Engineer to the Council, Town Hall, Southall.

FEBRUARY 22.—**Belfast.**—PLUMBING.—Internal and external plumbing to houses in course of erection on Rosebery-road and Sunnyside-street sites, for the T.C. City Surveyor, City Hall, Belfast.

FEBRUARY 22.—**Bollington.**—BOREHOLE.—For putting down of an 18 in. borehole in the parish of Rainow, for the U.D.C. Mr. C. A. Smith, Water Engineer, Council Offices, Bollington, near Macclesfield.

FEBRUARY 22.—**Hammersmith.**—ROADS.—Reinstatement of granite sett road, paths, brick piers and gates at the property, 206, Goldhawk-road, W.12, of the Board of Guardians. Mr. W. H. Glanville, Acting Clerk, Guardians' Offices, 206, Goldhawk-road, W.12.

FEBRUARY 22.—**Lewisham.**—WOOD PAVING WORKS.—Supplying and laying wood paving (about 5,800 super yards) upon prepared foundation in portion of Sydenham-road, for the B.C. Surveyors' Department, Town Hall, Catford.

FEBRUARY 22.—**Rhondda.**—ROADS, &C.—Laying-out of two roads and footpath, and laying of surface water drains and sewers at Ferndale, in connection with the housing scheme, for the U.D.C. Mr. E. Taylor, Engineer, Council Offices, Pentre, Rhondda.

FEBRUARY 23.—**Edinburgh.**—WALLS, &C.—Erection of walls, culvert extensions, &c., in connection with Peffermill-road widening, for the T.C. Mr. James Sim, City Road Surveyor, City Chambers, Edinburgh.

FEBRUARY 23.—**London, S.W.1.**—ROAD MATERIALS. Supply of granite and granite chippings, screened, pea and Farnham gravel, Kentish flints and ragstone, cockle shells, screened sand, &c. Director of Contracts, H.M. Office of Works, Storey's-gate, London, S.W.1.

FEBRUARY 23.—**Manchester.**—STREET WORKS.—Reconstruction of roadway, Stretford-road, Hulme, from Chorlton-road to the City boundary, for the T.C. City Engineer's Office, Town Hall, Manchester. Deposit, £1 1s.

FEBRUARY 24.—**Wandsworth.**—ROADS.—Re-forming roads and paths at the Special Surgical Neurological Hospital, Church-lane, Tooting, for the Board of Guardians. Mr. F. J. Curtis, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.18. Deposit, £2.

FEBRUARY 26.—**Chapel-en-le-Frith.**—SEWERAGE WORKS.—Construction of Bamford sewerage and sewage disposal works, for the R.D.C. Messrs. Brady & Partington, engineers, Town Hall, Chapel-en-le-Frith. Deposit, £3 3s.

FEBRUARY 28.—**Brynmawr.**—ROADS AND SEWERS.—Construction of roads and sewers (approximately 1½ miles), in connection with housing scheme, for the U.D.C. Mr. Henry Waters, Architect, Brynmawr. Deposit, £4 4s.

FEBRUARY 28.—**Gellygaer.**—ROAD.—Construction of third section of road between Hengoed and Ystrad Mynach, about three-quarters mile in length, for the U.D.C. Mr. F. Read, Surveyor to Council, Council Offices, Hengoed. Deposit, £2 2s.

FEBRUARY 28.—**Newton Abbot.**—ROADS, &C.—Construction of roads and sewers in connection with the second instalment of Milber housing scheme, for the U.D.C. Mr. Josias C. Beare, architect, 42, Devon-square, Newton Abbot. Deposit, £2 2s.

MARCH 1.—**Bedwas.**—ROADS AND SEWERS.—Construction of roads and sewers at Machen housing site, Bedwas housing site, and Tre Thomas housing site; extension of water main, &c., at Machen, and extension of sewers at Machen, for the U.D.C. Mr. A. S. V. Taylor, Surveyor, Council Offices, Bedwas.

MARCH 1.—**Edinburgh.**—WATER WORKS.—Forming springhead, providing and laying 1¼ in. cast-iron and 3 in. and 4 in. fireclay pipes, constructing ram house, &c., for the managers of the Royal Infirmary. Messrs. J. & A. Leslie & Reid, C.E., 72a, George-street, Edinburgh.

MARCH 12.—**Grays.**—SEWERAGE WORKS.—Construction of about 1,060 yards of concrete tube and cast-iron sewers of 36 in. diameter; roadway and underground screen and pump suction chambers, for the Thurrock, Grays and Tilbury Joint Sewerage Board. Mr. G. Midgley Taylor, M.Inst.C.E., 36, Victoria-street, Westminster, S.W.1. Deposit £5.

MARCH 28.—**Simla.**—WATERWORKS PLANT.—Supplying, erecting and running for one month a new pumping plant, consisting of three units and steel rising mains, &c., with all fittings for the water supply, for the Simla Municipality. Mr. A. F. Henderson, c.o. Messrs. Henry S. King & Co., Cornhill, E.C. Charge £1.

NO DATE.—**Sheffield.**—EXCAVATION.—Excavation work at new picture palace, Snig-hill, for the Grand Picture Houses (Sheffield), Ltd. Mr. T. W. Newbold, architect, Surrey-street, Sheffield.

Auction Sales, Tenders, etc.

✱FEBRUARY 23.—**Wilton.**—Messrs. Woolley & Wallis are instructed by the engineer contractor who is demolishing the wool store for the Town Council to sell the building material. Auctioneers, The Castle Auction Mart, Salisbury.

✱FEBRUARY 28.—**Hendon, N.W.**—Messrs. Joseph Hibbard & Sons will sell the second portion of surplus stock and plant, by order of the Grahame White Co., Ltd., at the Aerodrome, Church-lane, Hendon, saw-mill plant, timber stock, private and commercial motors, office and other furniture, stores, motor accessories, &c., pile carpeting and linoleum. Auctioneers, 15, Newington-green, Islington, N.

✱MARCH 1 AND 2.—**Herts.**—Messrs. Joseph Hibbard & Sons will sell, by order of Messrs. The Timber & Operators & Contractors, Ltd., at Marshmoor Mill, Herts, stock of well-seasoned English timber of large varieties. Auctioneers, 15, Newington-green, Islington, N.

✱MARCH 9.—**Norwich.**—Messrs. Hooker & Rogers will sell, at Costessey Hall, Norwich, carved oak panelling, fittings, timber and paving stone, &c., arising from the demolition of the East Wing and Prince's rooms. Auctioneers, 4, High-street, Croydon.

✱MARCH 11.—**Shirley near Croydon.**—Messrs. Robert W. Fuller, Moon & Fuller will sell, by direction of the Disposal Board, 41 Sectional huts, at Addington Park, Shirley, near Croydon. Auctioneers, 83, High-street, Croydon.

MARCH 31.—**London, W.**—Messrs. Knight, Frank & Rutley will let by auction by direction of the Council of the City of Westminster and the Guardians of the Westminster Union, Portland-street Workhouse, in Hanover-square Estate Room. Auctioneers, 20, Hanover-square, London, W.1.

Competitions.

(*See Competition News, page* 214.)

Public Appointments.

✱FEBRUARY 21.—**Tottenham.**—Clerk of Works in connection with the diversion and culverting of a section of the Stonebridge Watercourse, Tottenham, for the District Council. Engineer of the Council, Town Hall, Tottenham, N.15., endorsed "Clerk of Works."

✱FEBRUARY 25.—**Bicester, Oxfordshire.**—Clerk of Works required by the R.D.C. in connection with their housing scheme. Mr. A. Truman, Clerk to the Council, Bicester.

✱FEBRUARY 25.—**Watford.**—Quantity Surveyor required by the U.D.C. in connection with their Harebreaks Housing Scheme. Mr. W. Hudson, Clerk and Solicitor, Council Offices, High-street, Watford.

✱FEBRUARY 28.—**Liverpool.**—Building foreman required by the Tramways and Electric Power and Lighting Committee to take charge of the building section of the Tramways Department, and any other duties which may be allotted to him. General Manager, Liverpool Corporation Tramways, 24, Hatton-garden, Liverpool. Endorsed "Building Foreman."

✱FEBRUARY 28.—**Rubery Hill, near Birmingham.**—Clerk of Works required by the Rubery Hill Mental Hospital. The Medical Superintendent, Rubery Hill Mental Hospital, Rubery, near Birmingham.

✱FEBRUARY 28.—**Thirsk.**—Clerk of works required by the R.D.C. in connection with their housing scheme. Mr. William Swarbreck, Clerk to the Council, Finkle-street, Thirsk. Endorsed "Clerk of Works."

✱MARCH 4.—**Southampton.**—Two Junior Draughtsmen, a Junior Assistant, two Junior Quantity Surveyors and Accountants, a Junior Shorthand-Typist; ex-Service men preferred. Mr. A. L. Roberts, County Architect, The Castle, Winchester.

✱MARCH 5.—**Barrow-in-Furness.**—Assistant required in the Borough Engineer and Surveyor's Department, by the Corporation. Borough Engineer, Town Hall, Barrow-in-Furness.

✱MARCH 7.—**Cheshire.**—Deputy County Architect, Assistant Architectural Draughtsman. Mr. H. Beswick, County Architect, Newgate-street, Chester.

✱MARCH 8.—**Hackney, E.**—Correspondence and General Clerk required by the Borough Council in the Borough Engineer and Surveyor's Department. Mr. Norman Scorgie, Acting Town Clerk, Town Hall, Hackney, E.8.

TRADE NEWS.

A bar-bender is an essential adjunct to most engineering plant, and it is specially necessary in connection with reinforced concrete work. A machine of this kind should be simple in construction, possess few parts and be easily operated. Such an apparatus is required to be moved about from place to place as the job progresses; and weight, clumsiness and bulk are obvious disadvantages. Attention may, therefore, be called to the "Benquic" bar-bending machine, which has been put on the market by Messrs. Building Products, Ltd., of 3, Columbia House, 44-46, King's-road, S.W. 3. This machine comprises six parts only, the lever being of forged steel 3 ft. long and 3½ in. × 1 in. thick. The end of the lever is shaped like a handle, which will take ordinary 2 in. piping when extra leverage is required in the case of larger bars. The base plate is of cast iron, and measures 16 in. × 16 in. × ⅞ in. At each corner of the base plate there are drilled and tapped holes for fixing the plate to a bench or block, on which the bending is carried out. The fulcrum roller, the fulcrum pin and the bending pin and bending pin roller, as well as the adjustable angle or distance plate, are all made of mild steel. The machine can be easily and quickly operated by ordinary labour; it will bend plain, round, square and twisted bars to any angle desired; and the slots in the distance plate can be adjusted to take all bars up to 1¼ in. diameter. We are informed that flat bars have been bent on edge with this machine.

Messrs. Parker, Winder & Achurch, Ltd., of Birmingham, are exhibiting several of their specialities at the forthcoming British Industries Fair, Birmingham. A labour-saving device for floor-cleaning will be shown in the "Utility" electrical machine, by means of which 2,000 sq. ft. of floor space can be scoured and waxed in an hour, at small cost for electric current. The machine is claimed to give a brilliant, hard and lasting finish to floors; it is self-propelling and built entirely of metal. Four interchangeable attachments enable it to polish and wax hardwood floors, linoleum, &c.; scrub wood, cork or tile floors, &c.; remove paint, varnish, grease, &c., from factory floors; and sand-paper floors, desks, tables, &c. The machine is operated by a ½ h.p. motor, which is dust-proof and waterproof. The "Empire" electric light and power plant is a complete installation for lighting which can be used during the day when the ordinary lighting plant is not in use; it can also be used to operate vacuum cleaners, electric irons and other labour-saving devices. The "Empire" concrete mixer makes a 3 cu. ft. batch of concrete in from one to three minutes. The concrete is poured direct into a mould and mixes whilst pouring. Models will be shown for hand or power (petrol or electric), on wheels, skids and stands. The well-known "Australia" concrete block-making machine will also be shown. With the use of this machine, we are informed, four houses were built in eight days at the "Sentinel" housing scheme, Shrewsbury, by the contractors, Messrs. John Laing & Sons.

Messrs. MacAndrews & Forbes, Ltd., writing with reference to the case of Brannigen *v.* Harrington, reported in our last issue, state that this case is a confirmation of the danger of the ordinary plaster ceiling. "In this particular case," they state, "the plaintiff was suing for damages owing to injuries sustained by a portion of the ceiling falling and injuring her. . . . The judge found for the plaintiff, and is reported as having said: 'An accident of that kind, however, could not happen without negligence on the part of someone. Ceilings did not fall if due care were taken when they were put up and when they were repaired.'" The remedy, they state, "would seem to lie in the elimination of plaster for ceilings. Ceilings can be erected of wallboard, such as 'Fiberlic,' a homogeneous material which is nailed on to the flooring joists. It is impossible for it to fall or crack, can easily be decorated, is fire-resisting, and a sound deadener and insulator." "Fiberlic" wallboard has been approved by the Ministry of Health for any subsidised or State-aided housing scheme, and samples and full particulars may be obtained from Messrs. MacAndrews & Forbes, Ltd., of 65, South Molton-street, W. 1.

Building Trade Wages.

The Labour correspondent of a daily newspaper states that when the new National Wages and Conditions Council for the Building Industry meets in April it will consider a proposal for the regulation of building trade wages on a sliding scale. The scheme provides that for every ten points increase in the cost of living wages should be advanced 1d. per hour, and for every fall of 13 points in the cost of living wages should be reduced 1d. per hour. It is further suggested that the purchasing power of wages should not fall below 33 1-3 per cent. above the pre-war value, and this object will be attained by the above arrangement.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—The Plans Committee have approved of the following plans:—Garage at the rear of the dwelling-house, 7, Bon Accord-square, for the Aberdeen District Committee of the County Council, per Mr. Alexander Clark, solicitor; garage on the north side of the lane running westwards from Bon-Accord-street, for Mr. James Whitton, timber merchant, per Mr. Harvey Mennie, architect; alterations on the premises, 87, Union-street, for Messrs. J. Sears & Co., Ltd., per Messrs. Arnold & Sons, shopfitters; garage on west side of lane running between Walker-road and Menzies-road, for Mr. John Leiper, fishcurer, per Mr. Wm. Swan, engineer · reconstruction of luncheon-rooms at Woodside Works, for Messrs. Alex. Pirie & Sons, Ltd., per Messrs. Jenkins & Marr, C.E.; petrol-filling depot on the north side of Bedford-road for the Shell Mex Co., Ltd., per Mr. D. M. Wallace, local manager; addition to the dwelling-house, 352, Holburn-street, for the Donside Property Co., per Mr. John Black, secretary; garage on the north side of lane on the south side of Rubislaw Den South, for Mr. W. L. Cook, shipowner (further amended plan); garage on the west side of Oakhill-road for Mr. J. Hector, Jun., fish merchant; addition to store on the east side of lane on the west side of Argyll-place for Mr. A. W. Wood, plumber, per Mr. W. E. Gauld, architect; re-roofing of fish house at 78, Sinclair-road, for Mr. Wm. Taylor, Jun., fish merchant, per Mr. George Watt, architect. The Cleansing Committee recommend the introduction of public conveniences at the rear of the tram shelters at Mannofield and Bridge of Don shelters, the former to cost £550 and the latter £580.

AYR.—The Dean of Guild Court has passed plans for the reconstruction of the Ayr Picture Palace, Alloway-street, at an estimated cost of £10,000.

BARNSLEY.—The Public Works Commissioners have granted the T.C. a loan of £141,971 for its housing scheme.

BASFORD.—The U.D.C. is offering no objection to the extension of the works of the Notts. and Derby Coke and By-Product's Co.

BERMONDSEY.—The L.C.C. has given permission to the B.C. to borrow £10,950 for reconstructing sewers.

BODMIN.—Plans have been passed for the erection of new premises by the London City and Midland Banking Co., at the corner of Crockwell-street and Fore-street.

CATERHAM.—Plans passed by U.D.C.: Bungalow, Coulsdon-road, for Eastern Building Corporation; additions Railway Hotel, for Messrs. Whitbread & Co.

CHESTERFIELD.—The T.C. has granted permission for the building of the Hasland Working Men's Club, and the rebuilding of the "Ship" Inn, Lordsmill-street.

CHIPPING CAMPDEN.—The Gloucestershire Education Authority has agreed to spend £8,250 on building new classrooms at the grammar school.

EASTBOURNE.—Alterations to the Victoria Hotel, Latimer-road, are contemplated.

EAST PRESTON.—It was stated before the licensing magistrates that Mr. R. Spyers, the owner of the Willowhayne Hotel, intends to spend £3,000 on extensions.

FENTON.—The Justices have passed plans for alterations to the Shakespeare Hotel.

FINCHLEY.—The U.D.C. has approved a plan and estimate, amounting to £600, for a public sanitary convenience at Whetstone.

FOLKESTONE.—The T.C. has decided to obtain expert advice on the question of the extension of sewer outfall at Copt Point. It was stated at the last meeting of the Council that the cost might be £90,000.

GLASGOW.—The Dean of Guild Court has passed the following linings:—The North British Castings, Ltd., ironfounders, 116, Hope-street, to erect extension of foundry at Station-road, Shettleston; James Gourlay M'Pherson, 52, Queen-street, to make alterations on dwelling-house and coach-house at West End Park-street; the Corporation of Glasgow (Electricity Department), to erect electricity sub-station on the east side of Buchanan-street; the Corporation of Glasgow (Gas Department), to erect a water tank at Bartholomew-street and Adelphi-street, Bridgeton; the Corporation of Glasgow (Electricity Department), to erect an electricity sub-station at Garngad-road; Robert Walker, 6, Laggan-road, Newlands, to erect a bungalow at Merrylee-road, Cathcart; William Thomson, 139, Terregles-avenue, Pollokshields, to erect bungalow at Fernleigh-road, Merrylee; Arthur Porter, 2 Windsor-terrace, to make alterations on subjects at Great Western-terrace and increase the number of occupancies; the marriage trustees of Mrs. M. S. Arnot, to alter the mode of occupancy of dwelling-house at 14, Minard-road, Partick.

GOOLE.—Mr. H. F. Craggs, of the Goole Shipbuilding and Repairing Co., has promised the Bartholomew Hospital Committee £600, to provide a room or building in which the X-ray apparatus could be installed in memory of his wife.

HOLME CULTRAM.—The U.D.C. has passed plans for a bungalow, Skerburness-road, by Mr. F. W. Tassall, for Mr. Geo. Armstrong.

HOVE.—Plans passed by T.C.: Hove Creche Committee, alterations, 12, Goldstone-villas; Mr. W. H. Overton, for Mr. W. Upperton, alterations, 3, Hartington-villas; Mr. W. H. Overton, for Mr. B. W. Cook, conversion into flats, 2, Brunswick-square; Messrs. F. E. Brown & Sons, for Mr. J. J. Dunning, alterations, 110, Westbourne-street; Messrs. S. Young, Ltd., alterations, stables rear of 6, Brunswick-terrace; Mr. P. Callinan, glass covering to front area, 3, Queen's-gardens; Mr. H. Stringer, conversion into two flats, 22, Sackville-road; Mr. J. Nutley, for Miss Thorold, covered way, 14, York-avenue; Mr. E. Wallis Long, for Mrs. Partridge, alterations, 57, Brunswick-square; Mr. J. M. Cole, conversion into two flats, 2, Westbourne-terrace; Mr. G. Smith, alterations, stabling rear of 46, Brunswick-square; Messrs. T. D. L. Piper & Sons, for Mrs. Westlake, conversion into flats, 20, First avenue; Mr. A. W. Turner, petrol store, 8, St. John's-road.——In applying for a licence for Nos. 1, 2 and 3, Queen's-gardens, it was stated that alterations were in contemplation estimated to cost £70,000, for the conversion of the premises into a first-class hotel with 76 private rooms and 43 bathrooms.

LEVENS.—Permission has been given by the Carlisle Consistory Court to Lady Bagot to remove the existing stained glass from the east window of the church and insert other glass to the memory of her husband and son.

LONDON (HACKNEY).—Drainage works, Martello-terrace, for Mr. T. E. White; sanitary improvements, Stamford Hill Brewery, 25, Belfast road, for Messrs. J. Potterton & Sons; drainage at Salvation Army Mothers' Hospital, 165, Lower Clapton-road, for Messrs. K. Brown Bros.; drainage works, 24 houses, 18 to 23, Temple-street, for Mr. L. Llewellyn.

LONDON (HAMMERSMITH).—The Metropolitan Water Board has passed an estimate of £49,000 for the installation of filter plant and erection of necessary accommodation at the Bern Elms Works.

LONDON (POPLAR).—Plans passed by B.C.: Messrs. Andrews & Peascod, building and drainage of timber stores, for Messrs. J. Webster & Bros., Ltd., Armagh and Monteith-roads; Messrs. Harris & Wardrop, additions to clothing factory, Nos. 412–420, Old Ford-road (Messrs. Crompton & Sons); Mr. Edward L. Mason, sanitary improvements, Midland Railway Co.'s warehouse, Brunswick-street; Mr. W. Harris, additions to Mellish's Wharf, West Ferry-road; Messrs. Vigor & Co. (Poplar), Ltd., alterations to "The Ancient Briton" B.H., 42-4, Glaucus-street; Mr. Wm. Harber, rebuilding of "The Old Red Lion" B.H., 81, Kerbey-street; Messrs. Douglass, Lewis & Douglass, additions to R.N.L.B.I. storeyard, 27, Broomfield-street.

LONDON (STOKE NEWINGTON).—Drainage plans passed by B.C. at Chapel, Walford-road, for Messrs. Lovegrove & Papworth; at 29, Defoe-road, for Messrs. F. C. & D. W. Dobbs.

LONDON (WANDSWORTH).—Plans passed by B.C.: by British Petroleum Co., Ltd., garage, Union Brewery, Point Pleasant, Southfield; by Messrs. Freeman & Alcock, house and shed, 21, Grove-road, Balham; by Messrs. J. Garrett & Son, conservatory, 69, Poynder's-road, Clapham South; by Mr. J. Turner, smoke kiln, 9, Chestnut-grove, Balham; by Messrs. Swain & Selley—(i) 35 houses in Topsham-road, Upper Tooting; (ii) 26 houses in Hillbrook-road, Upper Tooting; by Messrs. Parr & Rowles, garage, 43, Trinity-road, Balham; by Messrs. Cheriton & Whitby, alterations to drains, The Chimes, Streatham High-road; by Mr. W. Lowe, garage, Roehampton Club, Roehampton-lane, Putney; by Mr. F. G. Thurgood, redrainage of Beulah Hall, Atkins-road, Clapham South; by Mr. E. J. Logan, alterations to drains, 10, Carlton-road, Putney; by Mr. W. J. Sidey, redrainage of garage at Stimex House, Balham-hill; by Mr. T. W. A. Hayward (for the Battersea Borough Council), conversion of huts into tenements at the Union Workhouse, Swaffield-road, Springfield; by Messrs. G. P. & H. Barnes, redrainage of 26, Thrale-road, Streatham; by Messrs. Blewett & Co., redrainage of 31, Tankerville-road, Streatham; by Messrs. Aickman & Jacob, additions to 107–109, Streatham High-road; by Mr. F. Goddard, additions to drains, 18A, Putney Bridge-road, Southfield; and by Messrs. Adkins & Son, redrainage of the entrance lodge, Exeter House, Putney Heath.

NEWBURY.—Plans passed by R.D.C.: Additions Kiln-road, Shaw, for Mr. W. White; factory, Hamstead Marshall, for the Kirtbury Whiting Co.

NORTHFLEET.—The U.D.C. has passed plans for two bungalows in Lewis-road, for the Easton Engineering and Construction Co., Ltd.; and for a house in Lewis-road, for Mr. Johnson.

PAISLEY.—The Renfrewshire Education Committee has decided to proceed with the extension at Paisley Grammar School and with the new Roman Catholic school at Netherhill, Paisley.

RUGELEY.—The Urban District Council of Rugeley is considering the question of increasing its water supply. The Council has instructed Messrs. W. H. Radford & Son, of Nottingham, who were the engineers for the original scheme, to report upon the best method of increasing the supply.

SALFORD.—The T.C. has approved of the recommendation of the Tramways Committee to borrow £38,500 for the reconstruction of tramways in the Crescent.

SHEFFIELD.—Plans passed by T.C.: Six houses, Dobbin-hill, for Mr. Arthur Shaw; house, Jobson-place, for the Roscoe Picture Palace Co., Ltd; new streets on the Brushes Estate, viz., Tideswell-road, Hornington-road, Willington-road, Downham-road, Eyncourt-road, West-quadrant, The Oval, Ribbleway, Main Way, Marlin Way, Calder Way, and Hucklow-road, for Sheffield Corporation; house, Fulwood-road, for Mr. Livesley; house, Westbourne-road, for Mr. J. W. Sandall.

SILLOTH.—A faculty has been granted the War Memorial Committee to erect a red granite cross and a war memorial in the churchyard.

SPREYTON.—It has been decided to proceed with the restoration of Spreyton Church, which was interrupted in 1914 by the war, when only the north aisle had been dealt with.

STEYNING.—Plans for structural alterations to the "Frankland Arms," Washington, for the Steyning Breweries, Ltd., have been approved by the Licensing Bench.

STOCKTON.—The R.D.C. has passed plans for the conversion of a dwelling-house into a shop at Clarence-street, Haverton Hill, and for additions to the Haverton Hill Hotel, subject to at least three other bedrooms being provided.

STOKESLEY.—The R.D.C. has approved plans for alterations of the London City and Midland Bank, Stokesley, and for three houses at Great Ayton, for Messrs. Tanfield, Robson and Hardy.

STROUD.—The U.D.C. has resolved to apply to the Ministry of Health for sanction to borrow £45,000 for the erection of houses on an approved site, on which work has been in progress for several months.

THURNSCOE.—A scheme by the U.D.C. for the extension of the burial ground, and the erection of a caretaker's house, has been agreed to.

WALLSEND.—The T.C. has approved of a scheme to construct a new road from Newcastle to the coast, and the Town Clerk has been instructed to suggest to the North-Eastern Railway Company that they should insert in their present Bill a clause making provision for the construction of a subway under their railway at Wallsend.

WEST DEAN.—The R.D.C. has received a report from Messrs. W. H. Radford & Sons, of Nottingham, the Council's engineers for a water supply scheme. It is proposed to obtain the water from the old red sandstone of Blackpool Bridge, Blakeney Walk, and a population of 20,000 will be provided for, the estimated consumption being 250,000 gallons per day. The wants of the Coleford urban district are being considered in this figure.

WHITLEY.—The R.D.C. has passed plan for a cottage at Sleight's, by Mr. H. G. Walker, for Mr. T. Pinkney, J.P.

WINCHESTER.—The Southampton C.C. has authorised the E.C. to expend £5,000 on additions to Lankhills, for the purposes of a centre for physically and mentally defective children.

WORTHING.—Plan passed by T.C.: house, Elmgrove, Mr. A. Migotti, for Mr. T. Sanders.

YORK.—Plans approved: M. A. Craven & Sons, transformer house, Coppergate; F. Shepherd & Son, workshop, Lead Mill-lane; York Equitable Industrial Society, Ltd., garage, Clementhorpe; Shell Marketing Co., storage tank, Layerthorpe; Merchant Adventurers' Co., w.c.'s, cottages, Fossgate.

FIRES.

BARRHEAD.—A fire has occurred in the benzol distilling plant shed of the National Tar Factory, Commercial-road.

BIRMINGHAM.—Serious damage has been done by fire at the premises of Messrs. Postans & Morley Bros., Ltd., varnish and paint manufacturers, Trevor-street, Nechells.

DOLGELLEY.—A disastrous fire has occurred at Pandy Leather and Cloth Factory.

HALIFAX.—Between £1,000 and £2,000 damage has been done by fire at the mill of Messrs. Nahum, cotton spinners and doublers, Salterhebble.

NEWPORT (MON.).—Heavy damage has been done by fire to the chemical works of Messrs. Morris & Griffins.

OBAN.—The ship repair yard of Messrs. Burrows & Co., situated near Gallanach, has been completely destroyed by fire.

PRESTON.—A fire has occurred at the Victoria Hotel, belonging to Sarah Jane Harling, Central Railway Station.

The Building Guilds.

It is reported that the building trade operatives in Portsmouth have decided to form a Guild for direct building operations on the same lines as the Building Guild in London.

The Galvanised-Iron Industry.

A large and well-known manufacturer writes to us predicting a trade boom in the galvanised iron industry. He is of opinion "that we are on the eve of a great world demand for galvanised corrugated sheets. Many buildings in the United Kingdom must be re-sheeted without further delay, while tens of thousands of iron roofs and sheds all over the world are in a dilapidated condition. To-day's prices are pounds per ton below actual cost of production, and even should fuel, steel billets, and labour fall still further, there is no possibility of galvanised iron prices remaining much longer at present low levels. Galvanising spelter is becoming somewhat scarce, and with an improved demand from sheet makers there will undoubtedly be a sharp advance in price. It is generally admitted that the downward movement in prices of galvanised sheets has been overdone, but it is to be hoped that the upward reaction will not be too great. There will probably be a concerted movement on the part of makers to try to steady prices. Consumers and merchants could prevent a runaway market by anticipating their requirements now."

* See also our List of Contracts, Competitions, etc.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue, lead and various prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.
Best Stocks 5 1 6

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	3 17 0	Best Blue Pressed Staffordshire ...	12 4 0
Best Stourbridge Fire bricks	12 14 0	Do. Bullnose ..	12 14 0
		Blue Wire Cuts	10 6 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers ..	29 10 0	D'ble Str'tch'rs	38 0 0
		D'ble Headers	35 0 0
Headers	29 0 0	One Side and two Ends ..	39 0 0
Quoins, Bullnose and 4½ in. Flats	36 0 0	Two Sides and one End	40 0 0
		Splays and Squints.....	37 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	18 6	per yard,	delivered 2 miles radius Paddington.
Pit Sand	24 0	,, ,,	
Thames Sand	25 0	,, ,,	
Best Washed Sand	2	,, ,,	
¾ in. Shingle for Ferro-Concrete	24 6	,, ,,	
¼ in. ,, ,,	25 6	,, ,,	

Per ton. delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	4 7 6	..	4 13 0

80/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above 10 0
Best Ground Blue Lias Lime 3 12 6 at rly. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 75s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 44s. 8d. per ton at rly. dpt

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	3 2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 5½
Do. do. delivered on road wagons at Nine Elms Depot	3 6½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 11½
Do. do. delivered on road wagons at above stations, per ft. cube..	5 0½
White basebed, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	s. d.
Scappled random blocks .....Per Ft. Cube	16 0
6 in. sawn two sides landings to sizes (under 30 ft. super.) .....Per Ft. Super	10 0
6 in. rubbed two sides, ditto ..... ,,	11 2
3 in. sawn two sides slabs (random sizes) ,,	4 4
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	2 8
1½ in. to 2 in. ditto, ditto ..... ,,	2 3
HARD YORK—	
Delivered at any Goods Station London.	
Scappled random blocks .....Per Ft. Cube	10 3
6 in. sawn two sides landing to sizes (under 40ft. super.) .....Per Ft. Super	9 6
6 in. rubbed two sides ditto ..... ,,	11 6
4 in. sawn two sides slabs (random sizes) ,,	5 6
3 in. ditto, ditto ,,	4 6
2 in. self-faced random flags ..Per Yard Super	13 6

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	64 0	per standard
4 × 9	60 0	,,
4 × 8	48 0	,,
4 × 7	46 0	,,
3 × 8	48 10	,,
3 × 7	46 0	,,
2½ × 7	45 0	,,
3 × 6	43 0	,,
3 × 11	65 0	,,
2 × 11	65 0	,,
3 × 9	55 0	,,
2½ × 9	55 0	,,
3 × 4½	44 0	,,
3 × 4	44 0	,,

PLANED BOARDS.

1 × 11	70 0	,,
1 × 9	60 0	,,

PLAIN EDGE FLOORING.

Inches		
¾	37/6	per square
1	40/-	,,
1¼	48/-	,,
1½	60/-	,,
1¾	72/-	,,

TONGUED AND GROOVED FLOORING.

Inches		
1	48/-	per square
1¼	60/-	,,
1½	72/-	,,

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	35/-	per square
¼	39/-	,,
1	50/-	,,

BATTENS.

Inches	s. d.	
¾ × 2	4 9	per 100 ft.

SAWN LATHS.

Per bundle				0	5	9
Dry Wainscot Oak, per ft. super, as inch	0	3	6 to	0	4	0
¼ in. do. do.	0	3	0 ..		—	
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	6 to	0	3	0
Cuba Mahogany	0	4	0 to	0	4	6
Teak (Rangoon, Moulmein or Java), per load.. ..	75	0	0 to	85	0	0
American Whitewood planks, per ft. cube ..	0	18	0 to	1	4	0
Best Scotch Glue, per cwt.	10	0	0 ..		—	
Liquid Glue, per cwt.....	6	12	0 ..		—	

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	56 10 0
,, ,,	22 by 12	46 0 0
First quality ,,	22 by 11	42 10 0
,, ,,	20 by 12	42 0 0
Best Blue Portmadoc	20 by 10	36 10 0
,, ,,	18 by 10	29 10 0
First quality ,,	18 by 9	24 5 0
,, ,,	16 by 10	22 15 0
,, ,,	16 by 8	18 0 0

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district.....	7 15 0
Ditto hand-made ditto.....	8 10 0
Ornamental ditto	7 7 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	35 0 0
Plain Compound Girders	39 0 0
,, Stanchions	41 0 0
In Roof Work	45 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Sizes up to and including ⅜ in. Tubes.	Fittings.	Sizes up to and including 2in. Tubes.	Fittings.	2¼ in. to 6 in. Tubes.	Fittings.
Gas	+ 7½	+ 5	— 5	— 2½	— 17½	
Water	+17½	+15	Net	+ 6½	— 15	
Steam	+28½	+26½	+ 5	+ 16½	— 12½	
Gal. Gas	+32½	+30	+ 5	+ 22½	— 7½	
,, Water	+45	+42½	+ 10	+ 33½	— 5	
,, Steam	+57½	+55	+ 15	+ 45	— 2½	

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts..	6 10	.. 4 10	.. 5 9½
2½ in. ,, ,,	7 10½	.. 5 4	.. 7 3
3 in. ,, ,,	9 8½	.. 5 9½	.. 8 8½
3½ in. ,, ,,	10 9	.. 7 3	.. 10 2
4 in. ,, ,,	11 9½	.. 8 2½	.. 11 7½

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	5 9	.. 3 0	.. 4 2
2½ in. ,, ,,	6 4	.. 3 7	.. 5 0
3 in. ,, ,,	7 6	.. 4 6	.. 6 8
3½ in. ,, ,,	9 1	.. 5 3	.. 7 9
4 in. ,, ,,	10 0	.. 6 6	.. 9 6

L.C.C. DRAIN PIPES,—9 ft. lengths London Prices.
per yd.: 4 in., 14/-. .. 5 in., 17/9 .. 6 in.. 21/5.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	32 10 0	to	33 10 0
Staffordshire Crown Bars - good merchant quality	33 0 0	..	35 0 0
Staffordshire "Marked Bars"	34 10 0	..	36 10 0
Mild Steel Bars	27 0 0	..	29 0 0
Steel Bars. Ferro-Concrete quality, basis price ..	27 0 0	..	29 0 0
Hoop Iron, basis price ..	35 0 0	..	37 0 0
,, ,, Galvanised ..	51 0 0	..	55 0 0
Sheet Iron, and Soft Steel Black—			
Ordinary sizes to 20 g.	35 0 0	..	37 0 0
,, ,, ,, 24 g.	36 0 0	..	38 0 0
,, ,, ,, 26 g.	38 0 0	..	39 0 0
Sheets Flat Best Soft Steel, G.B. & C.A. quality—			
Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	45 0 0	..	46 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	46 0 0	..	48 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g...	48 0 0	..	50 0 0
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9ft. 20 g.	35 0 0	..	36 0 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	36 0 0	..	37 0 0
Ordinary sizes, 6ft. to 9ft. 26 g.	38 0 0	..	40 0 0
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker ...	42 0 0	..	43 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	43 0 0	..	44 0 0
Best Soft Steel Sheets 26 g.	44 0 0	..	46 0 0
Cut Nails, 3in. to 6in. ..	42 0 0	..	44 0 0

(under 3in. usual trade extras.)

LEAD, &c.

	Delivered in London. £ s. d.		£ s. d.
LEAD Sheet, English, 4 lb. and up	36 0 0	..	—
Pipe in coils	36 10 0	..	—
Soil Pipe	39 0 0	..	—
Compo pipe	40 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	18 0 0	..	—
Do., ex country, carriage forward..... per ton	19 0 0	..	—

COPPER—

Strong Sheet ....per lb.	0 2 3	..	—
Thin ,, ,,	0 2 4	..	—
Copper nails .... ,,	0 2 3	..	—
Copper wire .... ,,	0 2 4	..	—
TIN—English Ingots ,,	0 2 6	..	—
SOLDER—Plumbers' ,,	0 1 1	..	—
Tinmen's..... ,,	0 1 4	..	—
Blowpipe ..... ,,	0 1 6	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	4½d.	32 oz. fourths	9½d.
,, thirds	6d.	,, thirds	1/-
21 ,, fourths	6½d.	Fluted, Obscured and Enamelled Sheet.	
,, thirds	7½d.		
26 ,, fourths ..	8d.	15 oz.	7d
,, thirds	9½d.	21 ,,	9d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES. Per Ft.

⅛ Rolled plate	5½d.
¼ Rough rolled	6½d.
⅜ Rough rolled	7½d
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	9½d.
Rolled Sheet	6½d.
White Rolled Cathedral	6½d.
Tinted do.	7½d.

Cast Plate is ½d. extra on the price of rough rolled.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes.....	per gallon	0 3 0
,, ,, ,, in barrels	,,	0 3 6
,, ,, ,, in drums	,,	0 3 7
Boiled ,, ,, in barrels	,,	0 3 11
,, ,, ,, in drums	,,	0 4 1
Turpentine in barrels	,,	0 6 7
,, in drums (10 gall.) ...	,,	0 6 10
Genuine Ground English White Lead, per ton		61 5 0

(In not less than 5 cwt. casks.)

GENUINE WHITE LEAD PAINT—
"Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots .....per ton delivered 86 15 0
Red Lead, Dry (packages extra) .. per ton 45 0 0
Best Linseed Oil Putty ..... per cwt. 1 1 0
Filocol..... per cwt. 0 18 0
Size. X D Quality..... ftn. 0 5 0

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish.....	Outside	0 15 0
Fine ditto	ditto	0 17 2
Fine Copal	ditto	1 1 0
Pale Copal	ditto	1 2 6
Pale Copal Carriage	ditto	1 4 6
Best ditto	ditto	1 14 6
Floor Varnish.....	Inside	0 19 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 18 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 6
Pale ditto	ditto	1 2 6
Best ditto	ditto	1 14 6
Best Japan Gold Size.....		0 12 6
Best Black Japan		0 18 0
Oak and Mahogany Stain (water)		0 17 6
Brunswick Black		0 11 9
Berlin Black.....		0 16 6
Knotting (patent)		1 16 0
French and Brush Polish		1 8 0
Liquid Dryers in Terebine		0 13 6
Cuirass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	23	0
Add if in clay	" "	2	0
Add for every additional depth of 6 ft.	" "	1	6
Planking and strutting to trenches	per foot super	0	7½
Do. to sides of excavation, including shoring	" "	1	6

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	55	0
Add if in underpinning in short lengths	" "	10	0
Add if in floors 6 in. thick	" "	4	0
Add if in beams	" "	5	0
Add if aggregate 1 : 2: 4	" "	15	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	4	6

BRICKLAYER.

		£	s	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	50	15	0
Add if in stocks	"	12	10	0
Add if in Staffordshire blues	"	34	10	0
Add if in Portland cement and sand	"	4	15	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat strucks or weathered joint	" "	0	0	3½

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	1	0
Axed in stocks	" "	0	2	0
Rubbed and gauged jointed in putty camber or segmental	" "	0	7	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	8
Setting ordinary register grates and stoves	each	1	5	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	6	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	9	6
Three-quarter-inch vertical damp course	" "	14	3
One inch on flats in two thicknesses	" "	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	6

MASON.

		s.	d.
York stone templates fixed	per foot cube	22	0
York stone sills fixed	" "	35	0
Bath stone and all labour fixed	" "	16	9
Portland stone fixed	" "	26	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	98	0
Do. 20 in. × 10 in. Do. Do.	"	115	0
Do. 24 in. × 12 in. Do. Do.	"	117	6

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	9	0
Do. joists	" "	10	0
Do. roofs, floors and partitions	" "	11	3
Do. trusses	" "	13	6

		¾"	1"	1¼"	1½"
Deal rough close boarding	per sq.	60/-	81/-	100/-	108/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	68	0
Do. to beams	per ft. sup.	1	10
Centres for arches	"	2	4
Gutter boards and beams	"	1	9

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		82/-	104/-	120/-
Do. tongued and grooved	"		88/-	110/-	127/-
Do. matchings	"	74/-	89/-		
Moulded skirting, including backings and grounds	per ft. sup.	2/4	2/8	3/2	3/8

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	2	0
Two Do. Do. Do.	" "	2	6
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	5	6

DOORS.

		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/8	2/11	3/1
Four-panel Do.	"	3/-	3/4	3/7
Two-panel moulded both sides	"	3/4	3/7	3/10
Four-panel Do. Do.	"	3/8	3/11	4/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	22	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	2/3	2/5	2/9
Deal shelves and bearers	"	2/-	2/2	2/3
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

		1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets		3/4	4/-	4/8	—	—
Deal strings wrot in both sides and framed	"	4/6	4/9	—	—	—

		s.	d.
Housings for steps and risers	each	1	0
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	3
Add if ramped	" "	12	6
Add if wreathed	" "	25	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	9d.	Rim locks	2/6
Sash fasteners	1/-	Mortice locks	5/6
Casement fasteners	1/6	Patent spring hinges and letting in to floor and making good	20/-
Casement stays	1/3		
Cupboard locks	1/6		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	39	0
Plain compound girders	"	43	0
Do. stanchions	"	45	0
In roof work	"	49	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	2/-	2/6	3/9	4/3
Ogee Do. Do.	"	2/6	3/3	4/-	5/-
Rain-water pipes with ears	"	2/11	3/9		
Extra for shoes and bends	each	4/7	6/3		
Do. stopped ends	"	2/-	2/6	3/9	4/3
Do. nozzles for inlets	"	2/3	2/9	4/-	4/6

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	61	6
Do. Do. in flats	"	56	6
Extra labour and solder in coated cesspools	each	7	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	2	1
Copper nailing	" "	0	8

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/1	1/9	2/-	3/7	4/6	
Do. service	"	1/8	2/2	2/8	4/3		
Do. soil	"						7/2
Bends in lead pipe	each					3/7	9/-
Soldered stop ends	"	1/4	1/10	2/3	3/2	3/10	
Red lead joints	"	1/-	1/2	1/5	2/1	2/8	5/5
Wiped soldered joints	"	3/2	3/10	4/6	5/5	7/2	10/10
Lead traps and cleaning screws	"				16/2	21/7	
Bib cocks and joints	"	7/6	11/3	18/-	48/-		
Stop cocks and joints	"	18/-	20/-	30/-	75/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	4
Do. Do. Sirapite	" "	3	9
Do. Do. Keen's	" "	5	0
Add sawn lathing	" "	2	0
Add metal lathing	" "	3	6
Portland cement screed	" "	2	11
Do. plain face	" "	4	9
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	11

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	7
26 oz. Do.	" "	1	10
Obscured sheet	" "	2	0
¼ in. rolled plate	" "	1	1½
¼ in. rough rolled or cast plate	" "	1	2½
¼ in. wired cast plate	" "	1	9

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	6
Knotting and priming	" "	1	0
Plain painting 1 coat	" "	1	6
Do. 2 coats	" "	2	4
Do. 3 coats	" "	3	2
Do. 4 coats	" "	4	0
Graining	" "	3	0
Varnishing twice	" "	2	6
Sizing	" "	0	4
Flatting	" "	0	9
Enamel	" "	2	0
Wax polishing	per foot sup.	0	11
French polishing	" "	1	9
Preparing for and hanging paper	per piece	2/- to 5/-	

* These prices apply to *new buildings* only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than first post on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

BEXLEY WELLING.—For enlargement of Bexley Welling Infants' Council School, for the Kent E.C. Mr. W. H. Robinson, F.S.A., County Education Architect, Maidstone :—

‡H. Friday & Sons, Erith	£2,200	0
T. Knight, Sidcup	2,260	0
F. Butcher, Bexley Heath	2,325	0
Douglass Halse & Co., Ltd., Woolwich	2,343	0
W. B. Butler, Bexley Heath	2,477	0
W. F. Blay, Ltd., Dartford	2,625	0
W. & A. Smith, Bexley Heath	2,754	10

BIRKENHEAD.—For painting the covered Wholesale Market, for the Corporation. Mr. C. Brownridge, M.Inst.C.E., Borough Engineer and Surveyor, Birkenhead :—

*J. Humphreys, Birkenhead	£969

BRADFORD.—For supply of steam shovel required in connection with the Esholt sewage scheme, for the T.C. :—

*H. J. Coles, Ltd.	£1,540

BROCKENHURST.—For completion of temporary building at pupil teachers' centre, for the Southampton C.C. :—

*A. Stanfield	£512

BURNTISLAND.—For erection of 24 houses on the Haugh housing site, for the T.C. Mr. Charles Campbell, architect, Methil; quantities by Messrs. Lawrence & Co., Edinburgh. Mr. J. A. Waddell, Burgh Surveyor :—

Brickwork—			
John Jackson & Son, Burntisland	£11,862	1	2
Robert Bruce & Son, Edinburgh	10,540	0	0
Wm. A. McLeod & Co., Ltd., Edinburgh	12,006	0	0
Anderson Jackson, Burntisland	10,941	5	10
Geo. Smith & Sons, Kirkcaldy	11,258	7	7
John Martin & Sons, Ltd.	13,278	1	9
Scott & Brown	12,226	0	0
Joiner work—			
Wm. J. Dewar, Burntisland	6,760	9	2
Thomas Henderson, Burntisland	6,648	14	0
Thomas Nimmo & Son, Burntisland	6,424	9	10
John King & Co., Lochgelly	7,053	0	0
Alex. Drysdale & Sons	8,690	0	0
Plumber work—			
Wm. Nicol, Buckhaven	2,705	5	8
H. Hutchison & Sons, Kirkcaldy	2,843	2	9
Wm. Crow, Burntisland	2,802	9	10
Mills & Donald	3,234	0	0
Plaster work—			
John Ross, Burntisland	1,822	2	5
James Williamson & Sons, Burntisland	1,989	8	10
William Anderson, Burntisland	1,739	19	11
Slater work—			
John Ross, Burntisland	1,807	6	1
James Williamson & Sons, Burntisland	2,018	2	8
William Anderson, Burntisland	2,166	19	2
Glazier work—			
A. Cunningham & Sons, Edinburgh	115	18	9
John Haxton & Co., Kirkcaldy	115	18	9

CHINGFORD.—For repairs to cottages at King George Reservoir, for the Metropolitan Water Board :—

*H. Almond	£120	0
Chessum & Young	156	5
W. J. Clemens	205	15
C. A. Bass	245	0

CRICKLEWOOD.—For repairs at 49 and 51, Wooton-road, Cricklewood, for the Metropolitan Water Board :—

*P. R. Atkins	£102	15
F. T. Cook	126	0
H. B. Oldrey & Son	164	10
E. T. Hill	175	0

DIBDEN PURLIEU.—Completing temporary school building, for the Southampton C.C. :—

*W. A. Fussell	£650

GELLYGAER.—For the construction of second section of the road between Hengoed and Tir-y-berth, for the U.D.C. Mr. F. Read, A.M.Inst.C.E., Borough Engineer and Surveyor :—

*Richard Jones, Caerphilly	£23,171
†Warlow & Co., Merthyr	22,944
Wm. Jones, Nelson (Glam.)	23,184
Barnes, Chaplin & Co., Cardiff	23,586
Greenly & Sons, Leominster	24,055
J. Sutherland, Abercynon	24,561
S. F. Hopley, Newport (Mon.)	25,461
G. Riley, Halifax	27,520
W. Blackburn & Co., Treharris	28,035
Geo. Davies, Ystrad Mynach	29,483

†Withdrawn.

GOLCAR.—For additions to the stores at Townend, Golcar. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge :—

*Harold Firth & Co., Golcar (*Mason*).
*James Garside & Sons, Golcar (*Joiner*).
*Murrant & Smith, Golcar (*Plumber*).
*Arthur Taylor, Golcar (*Plasterer and painter*).
*Abraham Graham, Huddersfield (*Concreter*).

GRIMSBY—For erection of (*a*) garage for motor vehicles at the Household Scavenging Yard, Doughty-road; and (*b*) corrugated-iron shed at the Night-soil Depot, West Marsh, for the Cleansing Committee. Mr. H. Gilbert Whyatt, M.Inst.C.E., Borough Engineer :—

Garage—			
*E. Marshall, Grimsby	£1,770	2	5½
H. Marrows, Grimsby	1,826	0	0
M. Holmes & Co., Grimsby	1,854	0	0
J. Borrill, Grimsby	1,947	15	0
W. Gilbert, Grimsby	1,955	0	0
Hewins & Goodhand, Grimsby	2,070	0	0
W. Ion, Cleethorpes	2,150	0	0
W. Kirton & Son, Grimsby	2,199	0	0
H. W. Holmes, Cleethorpes	2,223	3	0
Shed—			
*M. Holmes & Co., Grimsby	£1,275	0	0
E. Marshall, Grimsby	1,321	2	0
H. Marrows, Grimsby	1,393	7	7
J. Borrill, Grimsby	1,638	15	3
W. Kirton & Son, Grimsby	1,694	16	0

HAYWARDS HEATH.—For the erection of 20 brick houses at Eastern-road, for the U.D.C. Mr. George Plummer, surveyor :—

Stevens, Horlock & Co., Hackney	£18,160
James Bodle, Ltd., Eastbourne	20,284
Cook & Sons, Crawley	20,700
H. White, Haywards Heath	21,300
T. Divall, Chailey	22,737
H. Meckhonik, London	24,520
H. & J. Taylor, Lewisham	27,998

(No tender accepted; referred to the Housing Commissioner.)

HONITON.—For the erection of six parlour-type cottages, for the T.C. :—

*Chown & Son	£845 7 each

HOVE.—Supply of weighbridge in connection with crusher works, for the T.C. :—

*W. & T. Avery	£656

HOVE.—For paving and other works in Bolsover-road, for the T.C. :—

*McKellar & Westerman, Hove	£2,523

LEICESTER.—For the erection of a house Evington-lane, Leicester. Mr. F. E. Tabberer, architect, Leicester. Quantities by Mr. John T. Burt, F.S.I., Leicester :—

*Clark & Garrett, Leicester	£1,306	0	0
J. Bentley & Co., Leicester	1,337	0	0
Hardington & Elliott, Leicester	1,343	7	0
Chitham & Co., Ltd., Leicester	1,350	0	0
F. J. Bradford, Leicester	1,387	0	0
J. Chapman & Sons, Ltd., Leicester	1,399	0	0
T. R. Price & Co., Leicester	1,603	7	2

LEICESTER.—For the erection of houses on the Coleman-road housing site, Contract 2, for the T.C. Mr. A. J. Woods, architect, Leicester :—

BLOCK 1 ONLY.

A. & W. Jarvis, Leicester	£30,428
Tyers, Carding & Yates, Leicester	31,912
Royce-Cook Construction Co., London	36,480

BLOCK 2 ONLY.

H. Herbert & Sons	29,995

BLOCKS 1 AND 2 ONLY.

Chitham & Co., Leicester	£31,824 .. £31,440

BLOCK 3 ONLY.

W. Richardson	£29,793	0	4½
Smith & Nelson	29,869	0	0
G. Gurney	29,999	0	0
A. W. T. Bramley	31,306	0	0
E. & E. A. Slayter	31,655	0	0
H. M. Dudgeon	34,647	0	0

BLOCKS 2 AND 3 ONLY.

J. Bentley & Co.	£32,864 .. £31,540

BLOCKS 1, 2 AND 3.

	Block 1 32 houses.	Block 2 32 houses.	Block 3 30 houses.	Total 94 houses.
‡Coulson, Eilingworth & Pratt, Leicester	£28,123 7 0 ..	£29,987 0 0..	£26,809 0 0..	£84,919 7 0
†W. M. Sharp & Sons, Leicester	30,257 0 0 ..	30,059 0 0..	30,000 0 0..	90,316 0 0
A. Goodchild, Nottingham	31,186 0 0 ..	30,707 0 0..	29,179 0 0..	91,072 0 0
A. L. & H. W. Chown, Northampton	30,995 0 0 ..	30,609 0 0..	29,580 0 0..	91,184 0 0
B. W. Cole, Leicester	30,944 0 0 ..	30,500 0 0..	30,200 0 0..	91,644 0 0
Clark & Garratt, Leicester	31,255 4 8 ..	31,661 17 1..	29,607 13 7..	92,524 15 0
Bowles & Son, Leicester	31,846 0 0 ..	31,647 0 0..	30,588 0 0..	94,081 0 0
Bosworth & Lowe, Nottingham	31,948 0 0 ..	31,223 0 0..	31,165 0 0..	94,336 0 0
Hardington & Elliott, Leicester	33,120 0 0 ..	32,960 0 0..	30,900 0 0..	96,980 0 0
T. Barlow & Co., Ltd., Nottingham	33,466 16 0 ..	32,212 8 0..	31,725 10 0..	97,404 14 0
J. E. Johnson & Son, Ltd., Leicester	33,586 0 0 ..	33,250 0 0..	32,395 0 0..	99,231 0 0
‡Withdrawn.	33,411 11 2 ..	34,415 18 8..	32,929 10 3..	100,757 0 1

(*Continued on page 244*)

TOO LATE FOR CLASSIFICATION.

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*Henwood & Quiller, Liskeard	£259 19 10
C. Symons, Liskeard	297 17 6
Pooley & Sons, Liskeard	300 0 0

LONDON.—For the reconstruction of the Police Station at Marylebone-lane. The late J. Dixon Butler, F.R.I.B.A., Architect, New Scotland-yard, S.W. Quantities by Messrs. Thurgood, Son & Chidgey, 18, Adam-street, W.C. :—

Patman & Fotheringham	£17,291
Arding & Hobbs	17,960
Godson & Sons	18,125
C. W. Scott	18,270
J. & H. Higgs	18,473
Prestige & Co.	18,564
Holland & Hannen	18,697
Perry & Co.	18,873
Garlick, Ltd.	18,961
Holliday & Greenwood	19,153
Rice & Son	19,736
A. E. Symes	19,934

LONDON.—Erection of two open-fronted lean-to sheds at Electricity Station, for the Hackney B.C. :—

*F. Braby & Co.	£215 10

LONDON.—For paving of portion of Ellison-road, Streatham, for the Wandsworth B.C. :—

*J. Mowlem & Co.	£4,704 12

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Thomas Connell, Macduff (*Plumber*).
Jas. B. Leith, Macduff (*Painter*).

RYE.—For the erection of 18 houses and the sinking of three wells on sites in Icklesham, and 10 houses and two wells at Iden. Mr. H. M. Jeffrey, architect, 1B, Havelock-road, Hastings :—

‡Breeds & Son, Rye—Icklesham	£20,715 0 0
Do. do. Iden	11,120 0 0
‡Brailsford & Co., St. Leonards-on-Sea—Iden	10,599 0 0
J. W. Woolnough, Eastbourne—Icklesham	24,490 5 10
Do. —Iden	13,432 14 11
Hoad, St. Leonards-on-Sea—Icklesham	23,565 0 0
Do. —Iden	12,609 10 0

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*T. Wilkinson & Sons	£10,690

SHEFFIELD.—For painting and cleaning at libraries, for the T.C. :—

*F. A. Tinker & Sons—Central Lending Library, &c.	£442
*Smith & Snape—Copperbridge Library	£140
Do. —Hillsborough Library	£117

SHEFFIELD.—For painting work, for the T.C. :—

*J. & S. Collier—Crofts Tenements No. 2	£270 0
*E. Hudson—Crofts Tenements No. 1	375 0
*T. Wright—Corporation Buildings	258 0
Ditto West Bar	19 5
Ditto Gibraltar Buildings	72 0
*Smith & Snape—Kelvin Buildings	70 0
*G. T. Humphreys—Whitehouse Buildings	85 0
*Bodsworth Bros.—Hands-road	56 10

SOUTHWICK.—For the erection of 28 houses, for the U.D.C. Mr. G. W. Warr, Surveyor, Town Hall, Southwick, Essex :—

*P. W. Gladstone, Wimbledon	£25,771
London Building Co., Westminster	25,620
Hall's Construction, London, E.C.4	26,450
J. Bodle, Eastbourne	26,307
Field & Cox, Brighton	28,022
H. Boot, Westminster	28,181
J. Barnes, Brighton	28,776
R. Cook, Crawley	29,145
Lynn & Sons, Brighton	29,644
Mechonik, London, W.1	30,465
H. Farrow, Golders Green	31,932
Longley, Crawley	32,286
Hackman, Brighton	36,915

TENBY.—For the erection of 14 houses, for the T.C. Mr. B. Morley, Borough Engineer and Surveyor; quantities by Borough Engineer and Surveyor :—

†W. H. Phillips, Tenby	£13,547 0 0
Centropolis Public Works Co., Ltd., Milford Haven	14,180 14 2
G. H. Beynon, Tenby	16,440 14 9

THORPE (NEAR STAINES).—For the erection of eight cottages, for the Chertsey R.D.C. Messrs. Kenneth Wood, A.R.I.B.A., and J. Sarvis, Lic.R.I.B.A., architects, Old Bank Chambers, Woking :—

A. E. Jones, Woking	£6,744
†Tarrant, Ltd., Byfleet	6,950
Charman, Ascot	7,290
Prior & Watson, Kingston	7,480
Taylor, Camberley	7,489
Norris, Sunningdale	7,690
Gaze, Walton-on-Thames	7,877
Purnell & Clifford, Reading	7,945
Crossley, Bromley	7,950
Jarvis, Weybridge	7,993
Simmonds, Addlestone	8,500
Parker, Byfleet	9,097

WALTHAM ABBEY.—For provision of iron eliminating plant at the Waltham Abbey Station, for the Metropolitan Water Board :—

*R. Robinson & Co.	£1,373 4

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